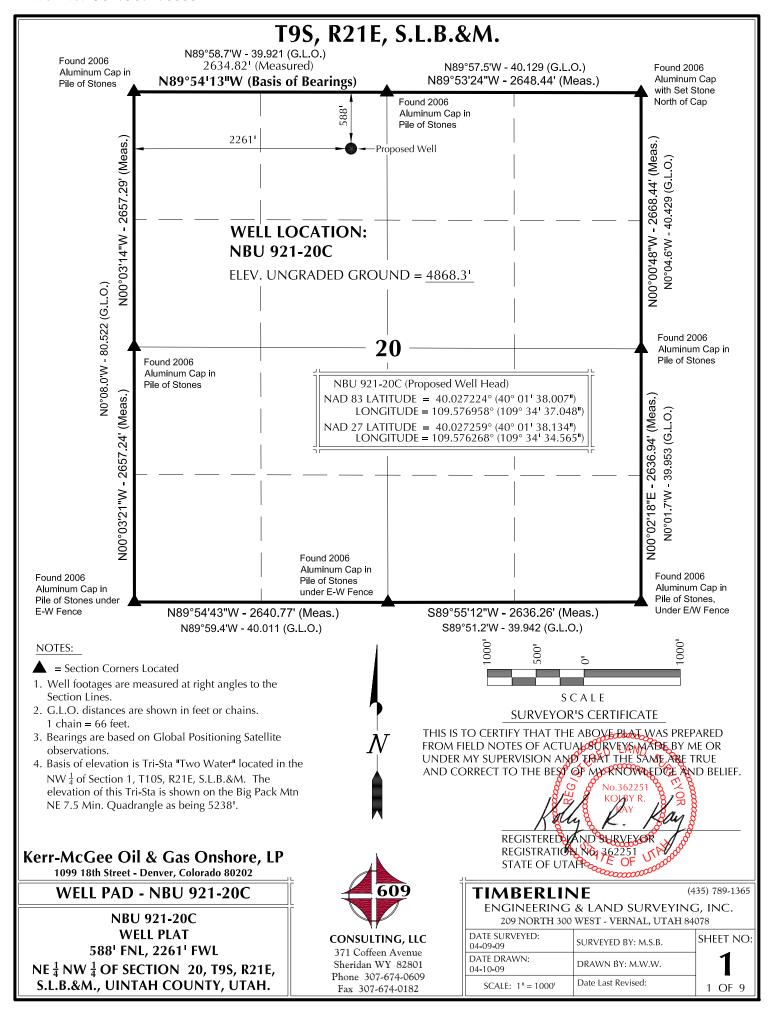
STATE OF UTAH  DEPARTMENT OF NATURAL RESOURCES  DIVISION OF OIL, GAS AND MINING						FORI			
APPLI	CATION FOR	PERMIT TO DRILL	-			1. WELL NAME and	NUMBER NBU 921-20C		
2. TYPE OF WORK  DRILL NEW WELL	REENTER P	&A WELL ( DEEPE	N WELL			3. FIELD OR WILDO	AT NATURAL BUTTES		
4. TYPE OF WELL Gas W	ell Coalt	oed Methane Well: NO				5. UNIT or COMMUI	NITIZATION AGREINATURAL BUTTES	EMENT NAME	
6. NAME OF OPERATOR KERF	R-MCGEE OIL &	GAS ONSHORE, L.P.				7. OPERATOR PHON	<b>IE</b> 720 929-6587		
8. ADDRESS OF OPERATOR P.C	). Box 173779, [	Denver, CO, 80217				9. OPERATOR E-MA mary.m	IL ondragon@anadarko	.com	
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)		11. MINERAL OWNE	.—.	=		12. SURFACE OWNI			
UTU 0575  13. NAME OF SURFACE OWNER (if box 12	= 'fee')	FEDERAL ( IND	IAN STATE (		FEE (	FEDERAL () INI	DIAN DIAN STATE (	~ ~	
·									
15. ADDRESS OF SURFACE OWNER (if box	12 = Tee )					16. SURFACE OWNI	ER E-MAIL (II DOX I	.z = ree ;	
17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')		18. INTEND TO COM	ions			19. SLANT	_	_	
Ute Tribe		YES ( (Submit C	ommingling Applicat	ion)	NO 🗍	VERTICAL ( DIR	ECTIONAL ( H	ORIZONTAL ()	
20. LOCATION OF WELL	FC	OOTAGES	QTR-QTR	s	SECTION	TOWNSHIP	RANGE	MERIDIAN	
LOCATION AT SURFACE	588 FN	NL 2261 FWL	NENW		20	9.0 S	21.0 E	S	
Top of Uppermost Producing Zone	588 FN	NL 2261 FWL	L 2261 FWL NENW		20	9.0 S	21.0 E	S	
At Total Depth	588 FN	NL 2261 FWL	NENW		20	9.0 S	21.0 E	S	
21. COUNTY UINTAH		22. DISTANCE TO N	EAREST LEASE LIN 588					JNIT	
		25. DISTANCE TO N (Applied For Drilling		SAME I	POOL	<b>26. PROPOSED DEPTH</b> MD: 10300 TVD: 10300			
<b>27. ELEVATION - GROUND LEVEL</b> 4868		28. BOND NUMBER	WYB000291		29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE Permit #43-8496			F APPLICABLE	
		A	TTACHMENTS			'			
VERIFY THE FOLLOWING	ARE ATTACH	HED IN ACCORDAN	CE WITH THE U	тан (	OIL AND G	GAS CONSERVATI	ON GENERAL RU	ILES	
<b>₩</b> WELL PLAT OR MAP PREPARED BY	LICENSED SU	RVEYOR OR ENGINEER	R	IPLETI	E DRILLING	PLAN			
AFFIDAVIT OF STATUS OF SURFACE	OWNER AGRI	EEMENT (IF FEE SURF	ACE) FOR	FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER					
DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)				TOPOGRAPHICAL MAP					
NAME Danielle Piernot	т	ITLE Regulatory Analysi	t		PHONE 720	929-6156			
SIGNATURE         DATE 09/03/2009					EMAIL danie	elle.piernot@anadarko	.com		
<b>API NUMBER ASSIGNED</b> 43047507170000	A	PPROVAL			Bol	Rijll			
Pe				Perm	nit Manager				

API Well No: 43047507170000 Received: 9/3/2009

	Proposed Hole, Casing, and Cement								
String	Hole Size	<b>Casing Size</b>	Top (MD)	Bottom (MD)					
Prod	7.875	4.5	0	10300					
Pipe	Grade	Length	Weight						
	Grade HCP-110 LT&C	700	11.6						
	Grade I-80 Buttress	9600	11.6						

API Well No: 43047507170000 Received: 9/3/2009

	Proposed Hole, Casing, and Cement							
String	Hole Size	Casing Size	Top (MD)	Bottom (MD)				
Surf	12.25	9.625	0	2700				
Pipe	Grade	Length	Weight					
	Grade J-55 LT&C	2700	36.0					



## **NBU 921-20C**

Surface: 588' FNL 2,261' FWL (NE/4NW/4)

Sec. 20 T9S R21E

Uintah, Utah Mineral Lease: UTU 0575

## ONSHORE ORDER NO. 1

## DRILLING PROGRAM

# 1. – 2. <u>Estimated Tops of Important Geologic Markers</u>: <u>Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations</u>:

<u>Formation</u>	<u>Depth</u>	Resource
Uinta Green River	0 – Surface 1,706'	
Birds Nest	1,985'	Water
Mahogany	2,496'	Water
Wasatch	5,079'	Gas
Mesaverde	8,112'	Gas
MVU2	9,063'	Gas
MVL1	9,619'	Gas
TD	10,300'	

# 3. <u>Pressure Control Equipment</u> (Schematic Attached)

Please refer to the attached Drilling Program.

# 4. **Proposed Casing & Cementing Program:**

Please refer to the attached Drilling Program.

# 5. <u>Drilling Fluids Program</u>:

Please refer to the attached Drilling Program.

## **Evaluation Program:**

Please refer to the attached Drilling Program.

# 7. **Abnormal Conditions:**

Maximum anticipated bottomhole pressure calculated at 10,300' TD, approximately equals 6,417 psi (calculated at 0.62 psi/foot).

Maximum anticipated surface pressure equals approximately 4,151 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

#### 8. Anticipated Starting Dates:

Drilling is planned to commence immediately upon approval of this application.

# 9. <u>Variances:</u>

Please refer to the attached Drilling Program.

*Onshore Order #2 – Air Drilling Variance* 

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- Blowout Prevention Equipment (BOPE) requirements;
- Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

#### **Background**

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found

competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 12-1/4 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 9-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

#### Variance for BOPE Requirements

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

#### Variance for Mud Material Requirements

Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

Variance for Special Drilling Operation (surface equipment placement) Requirements Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see

attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

# Variance for FIT Requirements

KMG also respectfully requests a variance to Onshore Order 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). The air rig operation utilizes a 5M BOPE when drilling. This well is not an exploratory well and is being drilled in an area where the formation integrity is well known. Additionally, when an FIT is run with the mud weight as required, the casing shoe frequently breaks down and causes subsequent lost circulation when drilling the entire depth of the well.

#### **Conclusion**

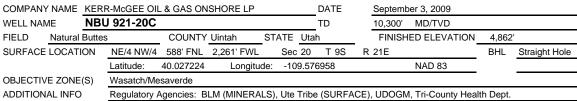
The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

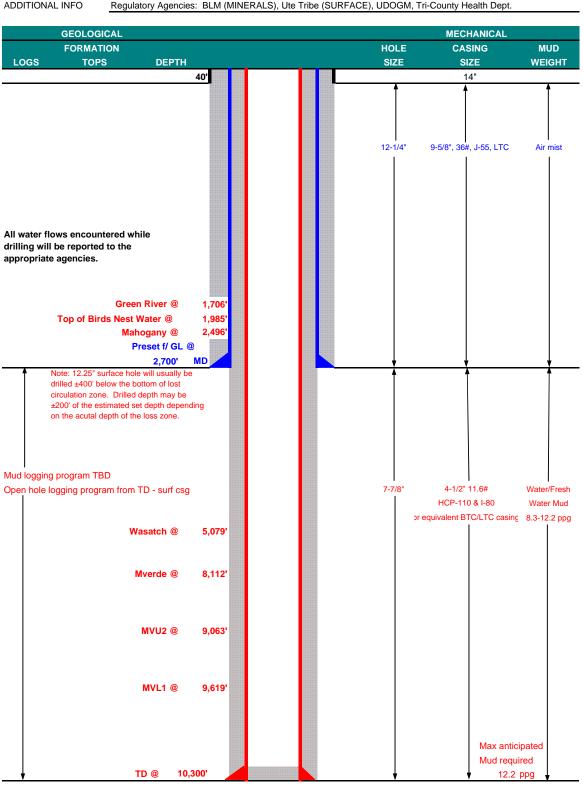
#### 10. Other Information:

Please refer to the attached Drilling Program.



# KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM







#### KERR-McGEE OIL & GAS ONSHORE LP

#### DRILLING PROGRAM

#### **CASING PROGRAM**

									ESIGN FACT	ORS
	SIZE	INT	ERVA	L	WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION
CONDUCTOR	14"	(	)-40'							
								3,520	2,020	453,000
SURFACE	9-5/8"	0	to	2700	36.00	J-55	LTC	0.82*	1.60	4.66
								7,780	6,350	278,000
PRODUCTION	4-1/2"	0	to	9600	11.60	I-80	BTC	1.82	1.04	2.86
								10,690	8,650	279,000
		9600	to	10300	11.60	HCP-110	LTC	2.50	1.32	42.23

\*Burst on suface casing is controlled by fracture gradient as shoe with gas gradient above.

D.F. = 2.07

- 1) Max Anticipated Surf. Press.(MASP) (Surf Csg) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac grad x TVD of next csg point))
- 2) MASP (Prod Casing) = Pore Pressure at TD (0.22 psi/ft-partial evac gradient x TD)

(Burst Assumptions: TD =

12.2 ppg)

12.2 ppg)

0.22 psi/ft = gradient for partially evac wellbore

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

MASP 4,151 psi

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

(Burst Assumptions: TD =

0.62 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

MABHP 6,417 psi

#### **CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE LEAD	500'	Premium cmt + 2% CaCl	215	60%	15.60	1.18
Option 1		+ 0.25 pps flocele				
TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	380	0%	15.60	1.18
		+ 2% CaCl + 0.25 pps flocele				
		Premium cmt + 2% CaCl				
SURFACE		NOTE: If well will circulate water to sur	face, optic	n 2 will be	utilized	
Option 2 LEAD	2,200'	Prem cmt + 16% Gel + 10 pps gilsonite	250	35%	11.00	3.82
		+ 0.25 pps Flocele + 3% salt BWOC				
TAIL	500	Premium cmt + 2% CaCl	180	35%	15.60	1.18
		+ 0.25 pps flocele				
TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
PRODUCTION LEAD	4,570'	Premium Lite II + 0.25 pps celloflake +	440	40%	11.00	3.38
		5 pps gilsonite + 10% gel '+ 1% Retarder				
TAIL	5,730'	50/50 Poz/G + 10% salt + 2% gel	1400	40%	14.30	1.31
		+ 0.1% R-3				

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

#### **FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE

Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe.

**PRODUCTION** 

Float shoe, 1 jt, float collar. Centralize first 3 joints & every third joint for a total of 15 bow spring centralizers.

#### **ADDITIONAL INFORMATION**

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

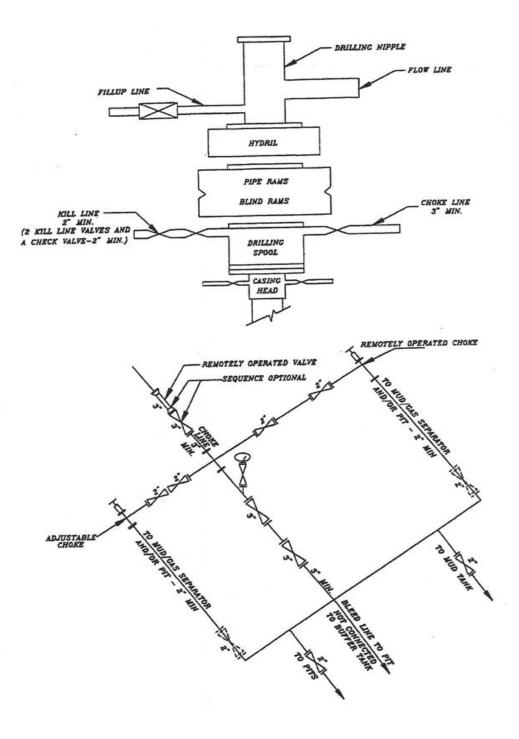
Drop Totco surveys every 2000'. Maximum allowable hole angle is 5 degrees.

Most rigs have PVT Systems for mud monitoring. If no PVT is available, visual monitoring will be utililzed.

DRILLING ENGINEER:		DATE:	
	John Huycke / Emile Goodwin	-	
DRILLING SUPERINTENDENT:		DATE:	
	John Merkel / Lovel Young	_	

<sup>\*</sup>Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

# EXHIBIT A NBU 921-20C



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

235

EXISTING ACCESS ROAD

#### WELL PAD LEGEND

•

CONSTRUCT DIVERSION DITCH (AS NEEDED)

· EXISTING

ACCESS ROAD

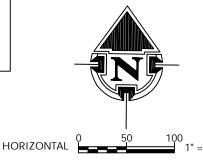
WELL LOCATION

EXISTING CONTOURS (2' INTERVAL)
PROPOSED CONTOURS (2' INTERVAL)

#### WELL PAD NBU 921-20C QUANTITIES

EXISTING GRADE @ LOC. STAKE = 4,868.3' FINISHED GRADE ELEVATION = 4,861.7' CUT SLOPES = 1.5:1 FILL SLOPES = 1.5:1

TOTAL CUT FOR WELL PAD = 14,645 C.Y.
TOTAL FILL FOR WELL PAD = 14,247 C.Y.
TOPSOIL @ 6" DEPTH = 2,866 C.Y.
EXCESS MATERIAL = 398 C.Y.
TOTAL DISTURBANCE = 3.56 ACRES
SHRINKAGE FACTOR = 1.10
SWELL FACTOR = 1.00
RESERVE PIT CAPACITY (2' OF FREEBOARD)
+/- 28,730 BARRELS
RESERVE PIT VOLUME
+/- 7,720 CY
BACKFLOW PIT CAPACITY (2' OF FREEBOARD)
+/- 15,770 BARRELS
BACKFLOW PIT VOLUME
+/- 4,300 CY



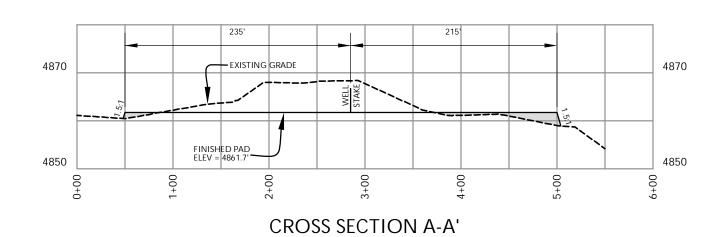
2' CONTOURS

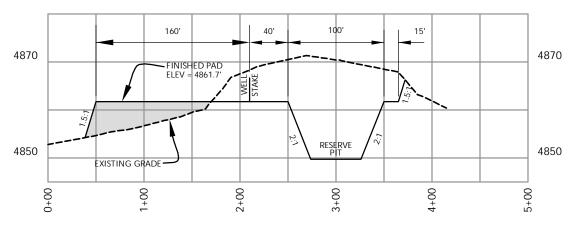
**TIMBERLINE** 

(435) 789-1365

ENGINEERING & LAND SURVEYING, INC. 209 NORTH 300 WEST - VERNAL, UTAH 84078







# CROSS SECTION B-B'

Kerr-McGee Oil & Gas Onshore, LP 1099 18th Street - Denver, Colorado 80202

WELL PAD - NBU 921-20C

**WELL PAD - CROSS SECTIONS** NBU 921-20C 588' FNL, 2261' FWL NE1/4 NW1/4 OF SECTION 20, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH



CONSULTING, LLC 371 Coffeen Avenue Sheridan WY 82801 Phone 307-674-0609 Fax 307-674-0182

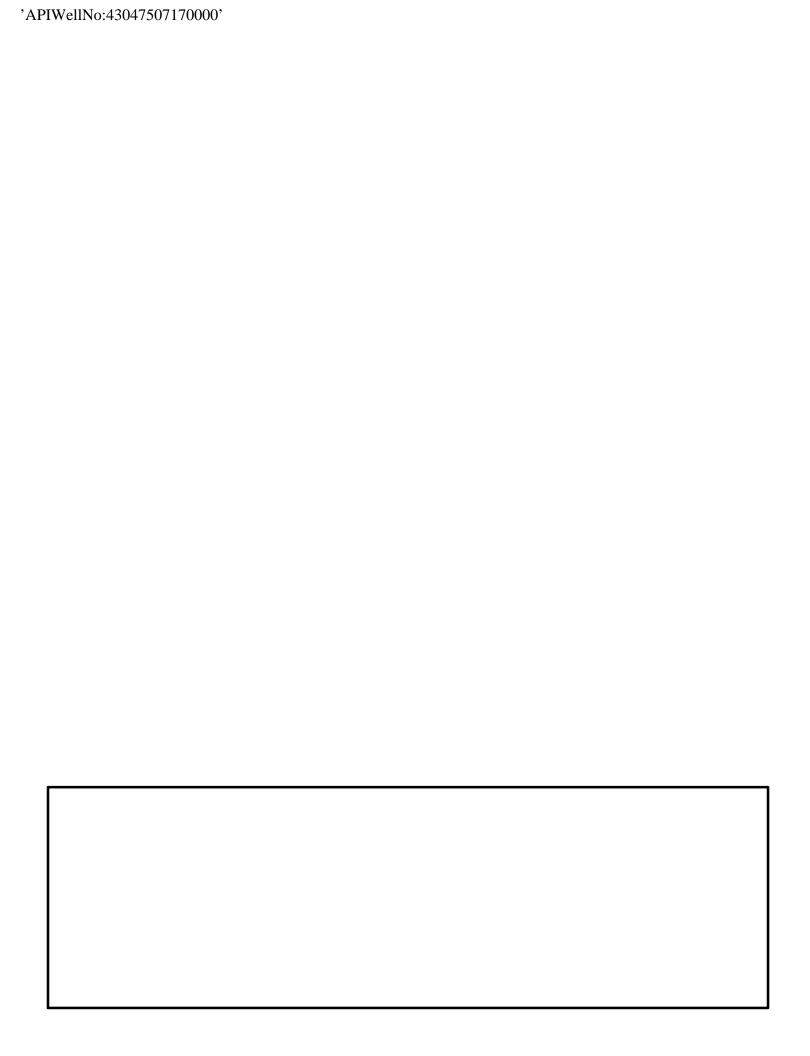
HORIZONTAL =	50	100
VERTICAL 0	10	20 1" = 20'

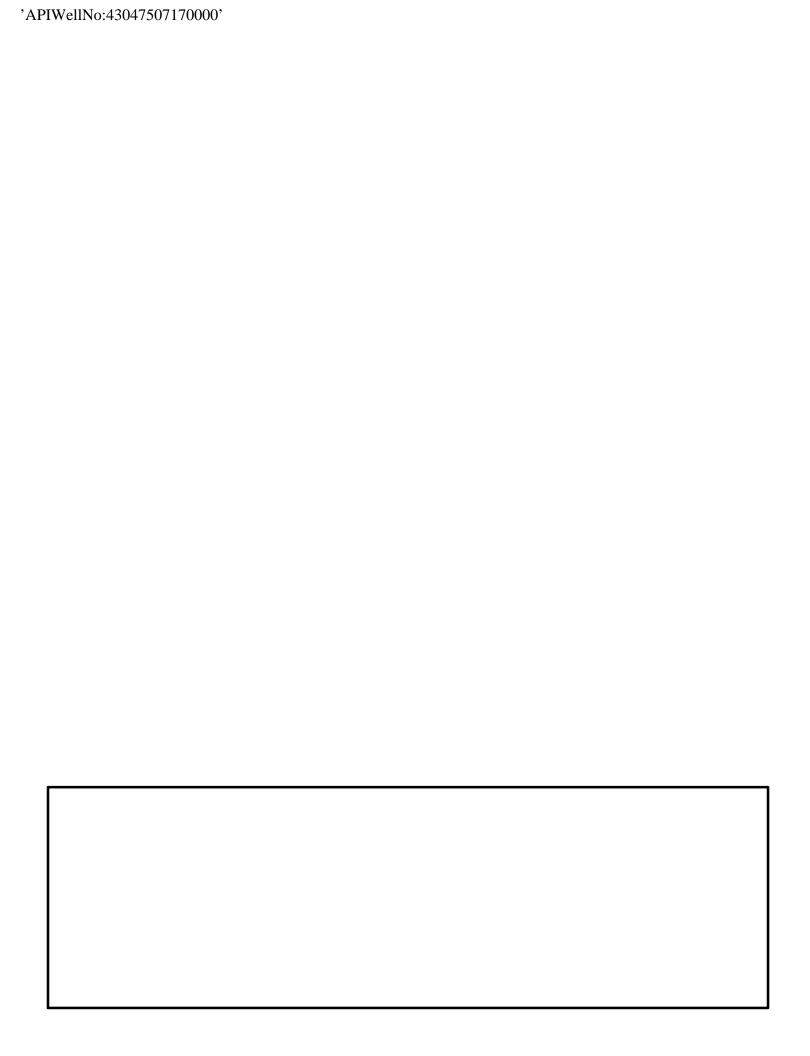
j	Scale:	1"=100'	Date:	4/14/09	SHEET NO:	
	REVISED:				3	3 OF 9

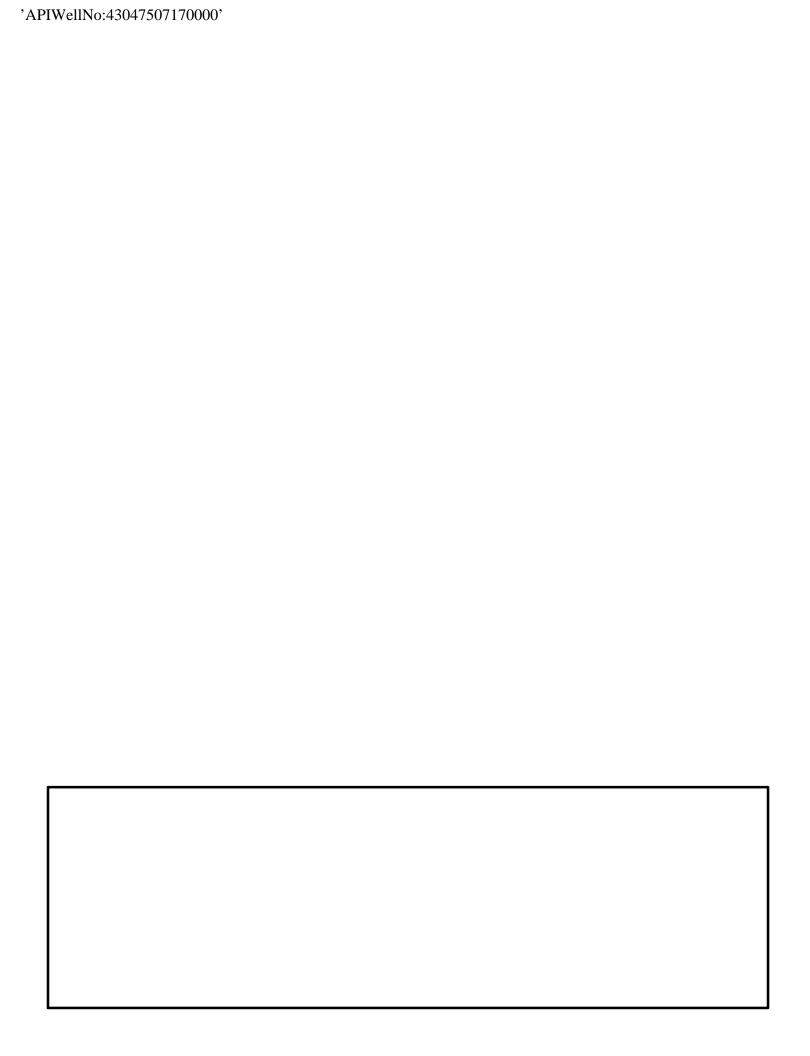
**TIMBERLINE** ENGINEERING & LAND SURVEYING, INC.

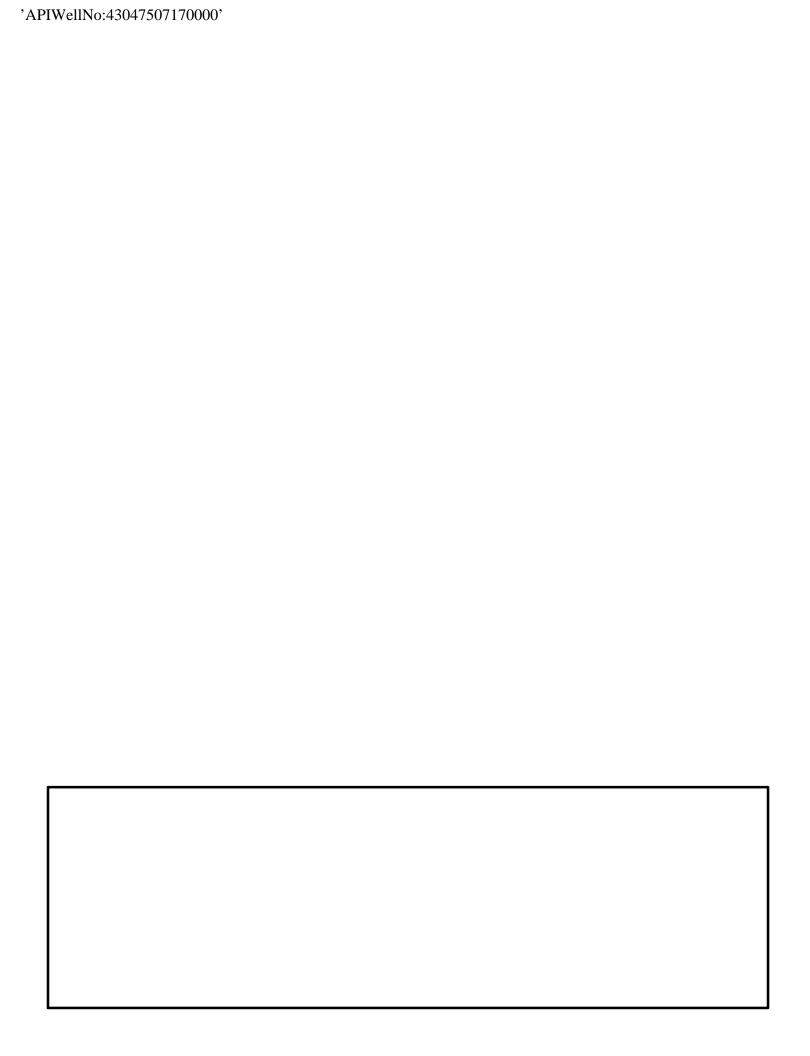
(435) 789-1365

209 NORTH 300 WEST - VERNAL, UTAH 84078









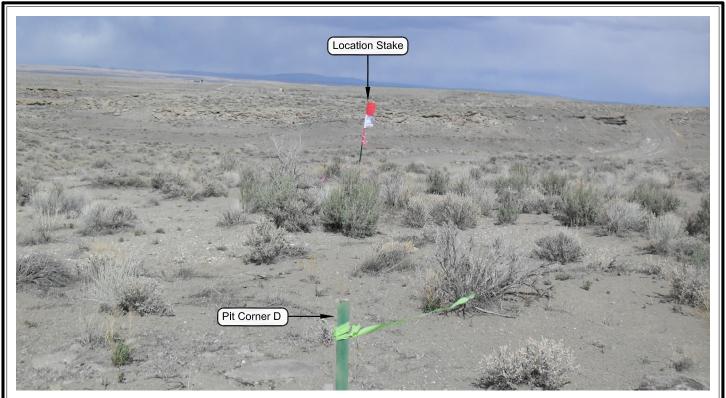


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

**CAMERA ANGLE: NORTHEASTERLY** 



PHOTO VIEW: FROM EXISTING ROAD TO LOCATION STAKE

**CAMERA ANGLE: SOUTHWESTERLY** 

#### Kerr-McGee Oil & Gas Onshore, LP 1099 18th Street - Denver, Colorado 80202

# Well Pad - NBU 921-20C

NBU 921-20C **LOCATION PHOTOS** 588' FNL, 2261' FWL NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  OF SECTION 20, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH.



# CONSULTING, LLC 371 Coffeen Avenue

Sheridan WY 82801 Phone 307-674-0609 Fax 307-674-0182

#### TIMBERLINE

(435) 789-1365

ENGINEERING & LAND SURVEYING, INC. 209 NORTH 300 WEST - VERNAL, UTAH 84078

ı			
	DATE PHOTOS TAKEN: 04-09-09	PHOTOS TAKEN BY: M.S.B.	SHEET NO
	DATE DRAWN: 04-10-09	DRAWN BY: M.W.W.	4
	Date Last Revised:		4 OF 9

# Kerr-McGee Oil & Gas Onshore, LP WELL PAD - NBU 921-20C WELL - NBU 921-20C Section 20, T9S, R21E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL. UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 13.9 MILES TO THE JUNCTION OF STATE HIGHWAY EXIT LEFT AND PROCEED IN A SOUTHERLY DIRECTION ALONG STATE HIGHWAY 88 APPROXIMATELY 16.8 MILES TO OURAY, UTAH. FROM OURAY, PROCEED IN A SOUTHERLY DIRECTION ALONG THE SEEP RIDGE ROAD (COUNTY B ROAD 2810) APPROXIMATELY 11.2 MILES TO THE INTERSECTION OF THE GLEN BENCH ROAD (COUNTY B ROAD 3260). EXIT LEFT AND PROCEED IN AN EASTERLY, THEN SOUTHEASTERLY, THEN NORTHEASTERLY DIRECTION ALONG THE GLEN BENCH ROAD APPROXIMATELY 11.4 MILES TO A CLASS D COUNTY ROAD TO THE SOUTHWEST. EXIT LEFT AND PROCEED IN A SOUTHWESTERLY DIRECTION ALONG THE CLASS D COUNTY ROAD APPROXIMATELY 1.8 MILES TO A SECOND CLASS D COUNTY ROAD TO THE NORTH. EXIT RIGHT AND PROCEED IN A NORTH BY NORTHWEST DIRECTION ALONG THE SECOND CLASS D COUNTY ROAD APPROXIMATELY 0.3 MILES TO A THIRD CLASS D COUNTY ROAD TO THE NORTH. EXIT RIGHT AND PROCEED IN A NORTHERLY, THEN NORTHEASTERLY, THEN NORTHERLY DIRECTION ALONG THE THIRD CLASS D COUNTY ROAD APPROXIMATELY 2.0 MILES TO A SERVICE ROAD TO THE SOUTHWEST. EXIT LEFT AND PROCEED IN A SOUTHWESTERLY, THEN NORTHWESTERLY DIRECTION ALONG THE SERVICE ROAD APPROXIMATELY 1.4 MILES TO A SECOND SERVICE ROAD TO THE SOUTHWEST. EXIT LEFT AND PROCEED IN A SOUTHWESTERLY DIRECTION APPROXIMATELY 0.6 MILES TO A THIRD SERVICE ROAD TO THE EXIT LEFT AND PROCEED IN A SOUTHWESTERLY DIRECTION SOUTHWEST. ALONG THE THIRD SERVICE ROAD APPROXIMATELY 0.3 MILES TO THE PROPOSED WELL LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 59.7 MILES IN A SOUTHERLY DIRECTION.

#### NBU 921-20C

Surface: 588' FNL 2,261' FWL (NE/4NW/4) Sec. 20 T9S R21E

> Uintah, Utah Mineral Lease: UTU 0575

Surface Owner: Ute Indian Tribe

#### ONSHORE ORDER NO. 1

# MULTI-POINT SURFACE USE & OPERATIONS PLAN SUBMITTED WITH SITE-SPECIFIC INFORMATION

This Application for Permit to Drill (APD) is filed under the Notice of Staking (NOS) process as stated in Onshore Order No. 1 (OSO #1) and supporting Bureau of Land Management (BLM) and Bureau of Indian Affairs (BIA) documents. An NOS was submitted showing the surface location in NE/4 NW/4 of Section 20 T9S R21E.

This Surface Use Plan of Operations (SUPO) or 13-point plan provides the site-specific information for the above-referenced wells. This information is to be incorporated by reference into the Master Development Plan (MDP) for Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee). The MDP is available upon request from the BIA-Ft Duchesne Office.

An on-site meeting is scheduled for September 1-3, 2009. Please contact Raleen White at 720-929-6666 for any questions.

## A. <u>Existing Roads</u>:

- A) Refer to Topo Map A for directions to the location.
- B) Refer to Topo Maps A and B for location of access roads within a 2-mile radius.

#### B. Planned Access Roads:

See MDP for additional details on road construction.

No new access road is proposed. Please refer to the attached Topo Map B. No pipelines will be crossed with the new construction.

Existence of pipelines; maximum grade; turnouts; major cut and fills, culverts, or bridges; gates, cattle guards, fence cuts, or modifications to existing facilities were determined at the on-site and are typically shown on the attached Exhibits and Topo maps.

## C. Location of Existing Wells Within a 1-Mile Radius:

Please refer to Topo Map C.

#### D. Location of Existing and Proposed Facilities:

See MDP for additional details on Existing and Proposed Facilities.

The following guidelines will apply if the well is productive.

Approximately  $\pm 5,090$ ' ( $\pm 0.96$  miles) of new pipeline is proposed for this well. Another  $\pm 230$ ' ( $\pm 0.04$  miles) of new pipeline is proposed for a concurrent pipeline to the NBU 921-20B proposed well. Please refer to the attached Topo Map D for the existing pipeline. Appropriate surface use agreements have been or will be obtained from the Ute Indian Tribe. Pipeline segments will be welded or zaplocked together on disturbed areas in or near the location, whenever possible, and dragged into place

## E. <u>Location and Type of Water Supply</u>:

See MDP for additional details on Location and Type of Water Supply.

Water for drilling purposes will be obtained from one of the following sources:

- Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim number 43-8496, application number 53617.
- Price Water Pumping Inc. Green River and White River, various sources, Water Right Number 49-1659, application number: a35745.

No water well is to be drilled on this lease.

#### F. Source of Construction Materials:

See MDP for additional details on Source of Construction Materials.

#### **G.** Methods of Handling Waste Materials:

See MDP for additional details on Methods of Handling Waste Materials.

Any produced water from the proposed well will be contained in a water tank and will then be hauled by truck to one of the pre-approved disposal sites:

RNI in Sec. 5 T9S R22E

NBU #159 in Sec. 35 T9S R21E Ace Oilfield in Sec. 2 T6S R20E MC&MC in Sec. 12 T6S R19E Pipeline Facility in Sec. 36 T9S R20E

Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E

Bonanza Evaporation Pond in Sec. 2 T10S R23E

#### H. <u>Ancillary Facilities</u>:

See MDP for additional details on Ancillary Facilities.

None are anticipated.

#### I. Well Site Layout: (See Location Layout Diagram)

See MDP for additional details on Well Site Layout.

#### **NBU 921-20C**

All pits will be fenced according to the following minimum standards:

- Net wire (39-inch) will be used with at least one strand of barbed wire on top of the net wire. Barbed wire is not necessary if pipe or some type of reinforcement rod is attached to the top of the entire fence.
- The net wire shall be no more than two inches above the ground. The barbed wire shall be three inches over the net wire. Total height of the fence shall be at least 42 inches.
- Corner posts shall be cemented and/or braced in such a manner to keep the fence tight at all times.
- Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.
- All wire shall be stretched, by using a stretching device, before it is attached to corner posts.

# J. <u>Plans for Reclamation of the Surface</u>:

See MDP for additional details on Plans for Reclamation of the Surface.

Kerr-McGee shall call the BIA for the seed mixture prior to starting interim and/or final reclamation actions.

# K. <u>Surface/Mineral Ownership</u>:

The well pad and access road are located on lands owned by:

Ute Indian Tribe PO Box 70 Fort Duchesne, Utah 84026 435-722-5141

The mineral ownership is listed below:

United States of America Bureau of Land Management 170 South 500 East Vernal, UT 84078 435-781-4400

# L. <u>Other Information</u>:

See MDP for additional details on Other Information.

# 'APIWellNo:43047507170000

# M. Lessee's or Operators' Representative & Certification:

Kathy Schneebeck Dulnoan Regulatory Analyst Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6007 Tommy Thompson General Manager, Drilling Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6724

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Bureau of Land Management Nationwide Bond WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Kathy Schneebeck Dulnoan

September 3, 2009

Date

CLASS I REVIEW OF KERR-MCGEE OIL & GAS ONSHORE LP'S 51 PROPOSED WELL LOCATIONS (T9S, R21E, SECTIONS 7, 8, 10, 11, 12, 17, 18, 19, 20, 23, 25, AND 30) IN UINTAH COUNTY, UTAH

By:

Jacki A. Montgomery

Prepared For:

Ute Tribal Land
Uintah and Ouray Agency

Bureau of Land Management Vernal Field Office

Prepared Under Contract With:

Kerr-McGee Oil & Gas Onshore LP 1368 South 1200 East Vernal, Utah 84078

Prepared By:

Montgomery Archaeological Consultants, Inc. P.O. Box 219 Moab, Utah 84532

MOAC Report No. 09-39

May 11, 2009

United States Department of Interior (FLPMA)
Permit No. 09-UT-60122

Public Lands Policy Coordination Office Archaeological Survey Permit No. 117

Ute Tribal Permit No. A09-363

# **Paleontological Reconnaissance Survey Report**

Survey of Kerr McGee's Proposed Well Pads, Access Roads & Pipelines for "NBU #921-8N, 17G & H, 20B, C & G" (Sec. 8, 16, 17 & 20, T 9 S, R 21 E)

Ouray SE Topographic Quadrangle Uintah County, Utah

June 10, 2009

Prepared by Stephen D. Sandau Paleontologist for Intermountain Paleo-Consulting P. O. Box 1125 Vernal, Utah 84078



# **Grasslands Consulting, Inc.**

4800 Happy Canyon Road, Suite 110, Denver, CO 80237 (303) 759-5377 Office (303) 759-5324 Fax

SPECIAL STATUS PLANT AND WILDLIFE SPECIES REPORT

Report #: GCI #63

**Operator:** Kerr-McGee Oil & Gas Onshore LP

Wells: NBU 921-20B, NBU 921-20C, NBU 921-20H

**Pipelines:** Associated pipelines to proposed well pads

**Access Roads:** Associated access roads to proposed well pads

Location: Section 20, Township 9 South, Range 21 East; Uintah County, Utah

Survey-Species: Uinta Basin Hookless Cactus (Sclerocactus wetlandicus) and nesting raptors

**Date:** 06/23/2009 and 06/24/2009

**Observer(s):** Grasslands Consulting, Inc. Biologists: Dan Hamilton, Jay Slocum, Matt Kelahan,

and Jonathan Sexauer. Technician: Chad Johnson

**Weather:** Partly cloudy, 60-90°F, 0-10 mph winds with no precipitation.

# **United States Department of the Interior**

# BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

IN REPLY REFER TO: 3160 (UT-922)

September 4, 2009

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2009 Plan of Development Natural Buttes Unit

Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2009 within the Natural Buttes Unit, Uintah County, Utah.

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

43-047-50710 NBU 921-19L Sec 19 T09S R21E 2636 FSL 1534 FWL 43-047-50711 NBU 921-19M Sec 19 T09S R21E 0735 FSL 1426 FWL 43-047-50712 NBU 921-19N Sec 19 T09S R21E 1023 FSL 2822 FWL 43-047-50715 NBU 921-20B Sec 20 T09S R21E 0716 FNL 2122 FEL 43-047-50717 NBU 921-20C Sec 20 T09S R21E 0588 FNL 2261 FWL

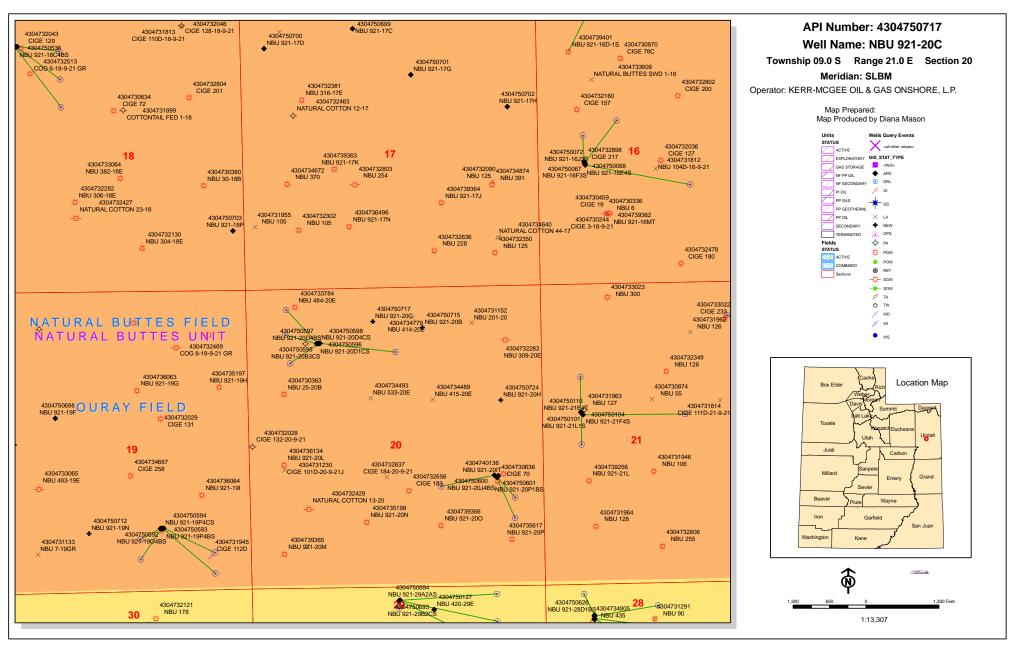
This office has no objection to permitting the wells at this time.

/s/ Michael L. Coulthard

bcc: File - Natural Buttes Unit
 Division of Oil Gas and Mining
 Central Files

Central Files
Agr. Sec. Chron
Fluid Chron

MCoulthard:mc:9-4-09

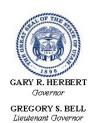


# WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED:	9/3/2009		API NO. ASSIGNED:	43047507170000
WELL NAME:	NBU 921-20C			
OPERATOR:	KERR-MCGEE OIL & GAS	ONSHORE, L.P. (N2995)	PHONE NUMBER:	720 929-6156
CONTACT:	Danielle Piernot			
PROPOSED LOCATION:	NENW 20 090S 210E		Permit Tech Review:	
SURFACE:	0588 FNL 2261 FWL		Engineering Review:	
воттом:	0588 FNL 2261 FWL		Geology Review:	
COUNTY:	UINTAH			
LATITUDE:	40.02713		LONGITUDE:	-109.57622
UTM SURF EASTINGS:	621491.00		NORTHINGS:	4431529.00
FIELD NAME:	NATURAL BUTTES			
LEASE TYPE:	1 - Federal			
LEASE NUMBER:	UTU 0575 PROP	POSED PRODUCING FORM	ATION(S): WASATCH-MESA	A VERDE
SURFACE OWNER:	2 - Indian		COALBED METHANE:	NO
RECEIVED AND/OR REVIE	:WED:	LOCATION AND SITI	NG:	
<b>₽</b> PLAT		R649-2-3.		
<b>Bond:</b> FEDERAL - WYB	000291	Unit: NATURAL BUT	ITES	
Potash		R649-3-2. Gener	al	
☑️ Oil Shale 190-5				
Oil Shale 190-3		R649-3-3. Excep	tion	
Oil Shale 190-13		Drilling Unit		
Water Permit: Permit	#43-8496	Board Cause No	o: Cause 173-14	
RDCC Review:		Effective Date:	12/2/1999	
Fee Surface Agreeme	ent	Siting: 460' fru	u bdry & uncomm. tract	
✓ Intent to Commingle		R649-3-11. Dire	ctional Drill	
Commingling Approved	i			
Comments: Presite C	ompleted			

Stipulations:

3 - Commingling - ddoucet 4 - Federal Approval - dmason 17 - Oil Shale 190-5(b) - dmason



# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

# **Permit To Drill**

\*\*\*\*\*\*

Well Name: NBU 921-20C API Well Number: 43047507170000

Lease Number: UTU 0575 Surface Owner: INDIAN Approval Date: 9/21/2009

#### Issued to:

KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

#### **Authority:**

Pursuant to Utah Code Ann. §40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

#### **Duration:**

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

# **Commingle:**

In accordance with Board Cause No. 173-14, commingling of the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

#### General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

#### **Conditions of Approval:**

State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

#### **Notification Requirements:**

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

• Within 24 hours following the spudding of the well – contact Carol Daniels at 801-538-5284

API Well No: 43047507170000

(please leave a voicemail message if not available)

submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at https://oilgas.ogm.utah.gov

# **Reporting Requirements:**

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) due within 5 days of spudding the well
- Monthly Status Report (Form 9) due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) due prior to implementation
- Written Notice of Emergency Changes (Form 9) due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) due prior to implementation
- Report of Water Encountered (Form 7) due within 30 days after completion
- Well Completion Report (Form 8) due within 30 days after completion or plugging

**Approved By:** 

Gil Hunt

Associate Director, Oil & Gas

Die Hunt

	STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES		FORM 9			
	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0575					
SUND	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ute Tr					
Do not use this form for propo bottom-hole depth, reenter plu DRILL form for such proposals	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES					
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-20C			
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		9. API NUMBER: 43047507170000			
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHON treet, Suite 600, Denver, CO, 80217 3779	<b>E NUMBER:</b> 720 929-6007 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES			
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0588 FNL 2261 FWL			COUNTY: UINTAH			
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NENW Section: 20	IP, RANGE, MERIDIAN: Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH			
11. CHE	CK APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPORT,	OR OTHER DATA			
TYPE OF SUBMISSION		TYPE OF ACTION				
,	☐ ACIDIZE	ALTER CASING	☐ CASING REPAIR			
Approximate date work will start:	☐ CHANGE TO PREVIOUS PLANS	CHANGE TUBING	☐ CHANGE WELL NAME			
9/21/2010	☐ CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE			
SUBSEQUENT REPORT	☐ DEEPEN	FRACTURE TREAT	☐ NEW CONSTRUCTION			
Date of Work Completion:	☐ OPERATOR CHANGE	PLUG AND ABANDON	☐ PLUG BACK			
	☐ PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION			
SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON			
	☐ TUBING REPAIR	VENT OR FLARE	☐ WATER DISPOSAL			
☐ DRILLING REPORT	☐ WATER SHUTOFF	SI TA STATUS EXTENSION	✓ APD EXTENSION			
Report Date:	☐ WILDCAT WELL DETERMINATION	OTHER	OTHER:			
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  Kerr-McGee Oil & Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.  Approved by the Utah Division of Oil, Gas and Mining  Date: September 28, 2010						
NAME (PLEASE PRINT) Danielle Piernot	<b>PHONE NUMBER</b> 720 929-6156	TITLE Regulatory Analyst				
SIGNATURE		DATE 9/20/2010				
I IN/A		= 9/70/701U				



## The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices** 

# Request for Permit Extension Validation Well Number 43047507170000

**API:** 43047507170000 **Well Name:** NBU 921-20C

Location: 0588 FNL 2261 FWL QTR NENW SEC 20 TWNP 090S RNG 210E MER S

Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date Original Permit Issued: 9/21/2009** 

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

equile levi	sion. Following is a checklist of some item	s related to the applicati	on, winch should be verified.
	ated on private land, has the ownership ch ced?  Yes  No	anged, if so, has the sur	face agreement been
	any wells been drilled in the vicinity of the requirements for this location? Yes		ould affect the spacing or
	here been any unit or other agreements pu s proposed well? 🔵 Yes 🃵 No	t in place that could affe	ect the permitting or operation
	there been any changes to the access rout the proposed location? ( Yes ( No	e including ownership, o	r rightof- way, which could
• Has tl	he approved source of water for drilling ch	anged? 🔵 Yes 📵 No	
	there been any physical changes to the su ge in plans from what was discussed at the		route which will require a Yes 📵 No
• Is boı	nding still in place, which covers this propo	osed well? 📵 Yes 🔵	Approved by the No Utah Division of Oil, Gas and Mining
Signature:	Danielle Piernot <b>Date:</b> 9/20/201	0	
_	Regulatory Analyst Representing: KERR-MC		<b>te:</b> September 28, 2010
			- (1)

Sundry Number: 17748 API Well Number: 43047507170000

	STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES		FORM 9
	DIVISION OF OIL, GAS, AND MINI	NG	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0575
SUND	RY NOTICES AND REPORTS O	N WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ute Tr
	sals to drill new wells, significantly deepen ex igged wells, or to drill horizontal laterals. Use		7.UNIT OF CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-20C
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		<b>9. API NUMBER:</b> 43047507170000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHONE treet, Suite 600, Denver, CO, 80217 3779	<b>NUMBER:</b> 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0588 FNL 2261 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NENW Section: 20	IP, RANGE, MERIDIAN: Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH
11. CHE	CK APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPORT	, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
Kerr-McGee Oil & G extension to this A	CHANGE TO PREVIOUS PLANS  CHANGE WELL STATUS  DEEPEN  OPERATOR CHANGE  PRODUCTION START OR RESUME  REPERFORATE CURRENT FORMATION  TUBING REPAIR  WATER SHUTOFF  WILDCAT WELL DETERMINATION  OMPLETED OPERATIONS. Clearly show all pertin as Onshore, L.P. (Kerr-McGee)  APD for the maximum time allow with any questions and/or comi	respectfully requests an yed. Please contact the ments. Thank you.	•
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	TITLE Regulatory Analyst	
SIGNATURE N/A		<b>DATE</b> 8/22/2011	

Sundry Number: 17748 API Well Number: 43047507170000



## The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices** 

# Request for Permit Extension Validation Well Number 43047507170000

**API:** 43047507170000 **Well Name:** NBU 921-20C

Location: 0588 FNL 2261 FWL QTR NENW SEC 20 TWNP 090S RNG 210E MER S

Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date Original Permit Issued: 9/21/2009** 

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

	ated on private land, has ted? 🔵 Yes 🌘 No	the ownership changed, if so, l	has the su	rface agree	ement been
	any wells been drilled in t requirements for this loc	the vicinity of the proposed we ation? ( Yes ( No	ell which w	ould affec	t the spacing or
	here been any unit or othe s proposed well?	er agreements put in place tha	t could aff	ect the pe	rmitting or operation
	there been any changes to the proposed location?	o the access route including on No	wnership,	or rightof-	way, which could
• Has th	he approved source of wa	ter for drilling changed? 🔘 🔌	Yes 🌘 N	0	
		changes to the surface location s discussed at the onsite evalu			ch will require a No
• Is bor	nding still in place, which	covers this proposed well?	Yes 🔵	No	
Signature:	Andy Lytle	<b>Date:</b> 8/22/2011			

Title: Regulatory Analyst Representing: KERR-MCGEE OIL & GAS ONSHORE, L.P.

Form 3160-3 (August 2007)

# RECEIVED

**UNITED STATES** DEPARTMENT OF THE INTERIOR SEP **BUREAU OF LAND MANAGEMENT** 

FORM APPROVED OMB No. 1004-0136 Expires July 31, 2010

Lease Serial No. UTU0575

6 1	f Indian	Allottee or	Tribe Name

APPLICATION FOR PERMIT	TO DRILL OR REENTER	6. If Indian, Allottee or Tribe Name	
Ia. Type of Work: DRILL REENTER		7. If Unit or CA Agreement, Name and N 891008900A	Vo.
lb. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Otl	her Single Zone Multiple Zone	Lease Name and Well No.     NBU 921-20C	
2. Name of Operator Contact: KERRMCGEE OIL&GAS ONSHORE-NA: Danielle	DANIELLE E PIERNOT  e.Piernot@anadarko.com	9. API Well No. 43 047 50717	
3a. Address PO BOX 173779 DENVER, CO 80202-3779	3b. Phone No. (include area code) Ph: 720-929-6156 Fx: 720-929-7156	10. Field and Pool, or Exploratory NATURAL BUTTES	
4. Location of Well (Report location clearly and in according	ance with any State requirements.*)	11. Sec., T., R., M., or Blk. and Survey of	or Area
At surface NENW 588FNL 2261FWL	40.02722 N Lat, 109.57696 W Lon	Sec 20 T9S R21E Mer SLB	
At proposed prod. zone NENW 588FNL 2261FWL	40.02722 N Lat, 109.57696 W Lon		
14. Distance in miles and direction from nearest town or post APPROXIMATELY 29 MILES SOUTHEAST OF	office* OURAY, UTAH		State JT
<ol> <li>Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)</li> <li>588 FEET</li> </ol>	16. No. of Acres in Lease 1600.00	17. Spacing Unit dedicated to this well	
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file	
APPROXIMATELY 800 FEET	10300 MD 10300 TVD	WYB000291	
21. Elevations (Show whether DF, KB, RT, GL, etc. 4868 GL	22. Approximate date work will start 09/21/2009	23. Estimated duration 60-90 DAYS	
	24. Attachments		
The following, completed in accordance with the requirements of	of Onshore Oil and Gas Order No. 1, shall be attached to	this form:	
<ol> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest Sys SUPO shall be filed with the appropriate Forest Service Of</li> </ol>	Item 20 above). tem Lands, the 5. Operator certification	ons unless covered by an existing bond on fi	`
25. Signature (Electronic Submission)	Name (Printed/Typed) DANIELLE E PIERNOT Ph: 720-929-6	Date 09/03/20	009
Title REGULATORY ANALYST			
Approved by (Signature)	Name (Printed/Typed)  Jerry Kenczka	a Nov	1 6 20
Assistant Field Manager Lands & Mineral Resources	VERNAL FIELD OFFICE		
Application approval does not warrant or certify the applicant hoperations thereon.  Conditions of approval, if any, are attache CONDI	TIONS OF APPRO	OVAL ATTACHE	ED.
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212,	make it a crime for any person knowingly and willfully	to make to any department or agency of the	United

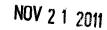
Additional Operator Remarks (see next page)

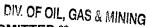
States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**NOTICE OF APPROVAL** 

Electronic Submission #73983 verified by the BLM Well Information System
For KERRMCGEE OIL&GAS ONSHORE LP, sent to the Vernal
Committed to AFMSS for processing by ROBIN R. HANSEN on 09/04/2009 ()

RECEIVED







## UNITED STATES DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT VERNAL FIELD OFFICE**

**VERNAL, UT 84078** 

(435) 781-4400



## CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

Company:	Kerr McGee Oil & Gas Onshore	Location:	NENW, Sec. 20, T9S, R21E (S) NENW, Sec. 20, T9S, R21E (B)
Well No:	NBU 921-20C	Lease No:	UTU-0575
API No:	43-047-50717	Agreement:	Natural Buttes Unit

**OFFICE NUMBER:** 

(435) 781-4400

**OFFICE FAX NUMBER: (435) 781-3420** 

## A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO INSURE COMPLIANCE

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.

#### NOTIFICATION REQUIREMENTS

Construction Activity (Notify Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist)	_	The Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist shall be notified at least 48 hours in advance of any construction activity. The Ute Tribal office is open Monday through Thursday.			
Construction Completion (Notify Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist)		Upon completion of the pertinent APD/ROW construction, notify the Ute Tribe Energy & Minerals Dept. for a Tribal Technician to verify the Affidavit of Completion. Notify the BLM Environmental Scientist prior to moving on the drilling rig.			
Spud Notice (Notify BLM Petroleum Engineer)	_	Twenty-Four (24) hours prior to spudding the well.			
Casing String & Cementing (Notify BLM Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to running casing and cementing all casing strings to: <u>ut_vn_opreport@blm.gov</u> .			
BOP & Related Equipment Tests (Notify BLM Supv. Petroleum Tech.)	-	Twenty-Four (24) hours prior to initiating pressure tests.			
First Production Notice (Notify BLM Petroleum Engineer)	_	Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days.			

Page 2 of 7 Well: NBU 921-20C 11/8/2011

## SURFACE USE PROGRAM CONDITIONS OF APPROVAL (COAs)

- All new and replacement internal combustion gas field engines of less than or equal to 300 design-rated horsepower must not emit more than 2 gms of NO<sub>x</sub> per horsepower-hour. This requirement does not apply to gas field engines of less than or equal to 40 design-rated horsepower.
- All and replacement internal combustion gas field engines of greater than 300 design rated horsepower must not emit more than 1.0 gms of NO<sub>x</sub> per horsepower-hour.

#### **SITE SPECIFIC COAs:**

- Paint facilities "Shadow Gray."
- Re-route storm water runoff around the perimeter of the well pad, as depicted on location layout.
- Construct low water crossing on access road.
- Monitor location by a permitted paleontologist during the construction process.
- Monitor location by a permitted archaeologist during the construction process.
- Fence of the archaeological site 42Un2138 prior to the construction operations.
- In accordance with the guidelines specified in the Utah BLM Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, 2002 a raptor survey shall be conducted prior to construction of the proposed location, pipeline, or access road if construction would take place during raptor nesting season (January 1 through September 30). If active raptor nests are identified during a new survey, KMG shall conduct its operations according to the seasonal restrictions detailed I the Uinta Basin-specific RMP guidelines and spatial offsets specified by the USFWS Utah Raptor Guidelines (See Appendix D). The USFWS recommends a ¼-mile avoidance buffer surrounding active burrowing owl nests between March 1 and August 31. The USFWS recommends a ¼-mile avoidance buffer surrounding active golden eagle nests between January 1 and August 31.
- Conduct a new biological survey in accordance with the guidelines specified in the USFWS Rare Plant Conservation Measures for Uinta Basin hookless Cactus and the 2008 BLM RMP ROD, to include a 300-foot buffer from proposed construction operations (See Appendix D), and conduct operations according to agency specifications and the requirements of the BO issued as a result of Section & USFWS consultation.

#### **BIA Standard Conditions of Approval**

- Soil erosion will be mitigated by reseeding all disturbed areas.
- The gathering pipelines will be constructed to lie on the surface. The surface pipelines will not be bladed or cleared of vegetation. Where pipelines are constructed parallel to roads they may be welded on the road and then lifted from the road onto the right-of-way. Where pipelines do

not parallel roads but cross-country between sites, they shall be welded in place at well sites or on access roads and then pulled between stations with a suitable piece of equipment. Traffic will be restricted along these areas so that the pipeline right-of-way will not be used as an access road.

- An open drilling system shall be used, unless otherwise specified in 10.0 Additional Stipulations of this document and in the Application for Permit to Drill. A closed drilling system shall be used in all flood plain areas, and other highly sensitive areas, recommended by the Ute Tribe Technician, BIA, and other agencies involved.
- The reserve pit shall be lined with a synthetic leak proof liner. After the drilling operation is complete, excess fluids shall be removed from the reserve pit and either hauled to an approved disposal site or shall be used to drill other wells. When the fluids are removed the pit shall be backfilled a minimum of 3.0' below the soil surface elevation.
- A closed production system shall be used. This means all produced water and oil field fluid
  wastes shall be contained in leak proof tanks. These fluids shall be disposed of in either
  approved injection wells or disposal pits.
- Major low water crossings will be armored with pit run material to protect them from erosion.
- All personnel shall refrain from collecting any paleontological fossils and from disturbing any fossil resources in the area.
- If fossils are exposed or identified during construction, all construction must cease and immediate notification to the Energy and Minerals Department and the Cultural Rights Protection Officer.
- Before the site is abandoned the company will be required to restore the right-of-way to near its original state. The disturbed area will be reseeded with desirable perennial vegetation. If necessary, the Bureau of Indian Affairs or Bureau of Land Management will provide a suitable seed mixture.
- Noxious weeds will be controlled on all surface disturbances within the project area. If noxious weeds spread from the project area onto adjoining land, the company will also be responsible for their control.
- If project construction operations are scheduled to occur after December 31, 2009, KMG shall conduct annual raptor surveys in accordance with the guidelines specified in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, 2002. If active raptor nest are indentified during a new survey, KMG shall conduct its operations according to the seasonal restrictions detailed in the Uinta basin-specific RMP guidelines and spatial offsets specified by the USFWS Utah Raptor Guidelines (See Appendix D).
- USFWS threatened and endangered plant and animal conservation measures will be followed, as appropriate to the species identified by the biological resource survey (See Appendix D).
- All personnel shall refrain from collecting artifacts and from disturbing any significant cultural resources in the area.
- If artifacts or any culturally sensitive materials are exposed or identified during construction, all construction must cease and immediate notification to the Energy and Minerals Department and the Cultural Rights Protection Officer.

Page 4 of 7 Well: NBU 921-20C 11/8/2011

## DOWNHOLE PROGRAM CONDITIONS OF APPROVAL (COAs)

#### SITE SPECIFIC DOWNHOLE COAs:

Gamma Ray Log shall be run from total depth to surface.

#### **Variances Granted:**

#### Air Drilling

Properly lubricated and maintained rotating head. Variance granted to use a properly maintained and lubricated diverter bowl in place of a rotating head.

Blooie line discharge 100' from the well bore. Variance granted for blooie line discharge to be 45' from the well bore.

Variance granted for two truck/trailer mounted air compressors located with 40 feet from the well bore and 60' from the blooie line.

Mud material requirements. In lieu of mud products on location, Kerr McGee will fill the reserve pit with water for kill fluid.

Automatic igniter. Variance granted for igniter due to there being no productive formations while drilling with air.

FIT test. Variance granted due to well know geology and problems that can occur with FIT test.

All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to. The following items are emphasized:

#### DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.

Page 5 of 7 Well: NBU 921-20C 11/8/2011

• All BOPE components shall be inspected daily and those inspections shall be recorded in the daily drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a test pump with a chart recorder and **NOT** by the rig pumps. Test shall be reported in the driller's log.

- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.
- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.
- No aggressive/fresh hard-banded drill pipe shall be used within casing.
- Cement baskets shall not be run on surface casing.
- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal Field Office.
- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.
- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.
- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM, Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.
- A cement bond log (CBL) will be run from the production casing shoe to the <u>top of cement</u> and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.
- Please submit an electronic copy of all other logs run on this well in LAS format to UT\_VN\_Welllogs@BLM.gov. This submission will supersede the requirement for submittal of paper logs to the BLM.
- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

Page 6 of 7 Well: NBU 921-20C 11/8/2011

#### **OPERATING REQUIREMENT REMINDERS:**

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.
- For information regarding production reporting, contact the Office of Natural Resources Revenue (ONRR) at www.ONRR.gov.
- Should the well be successfully completed for production, the BLM Vernal Field office must be notified when it is placed in a producing status. Such notification will be by written communication and must be received in this office by not later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following informational items:
  - o Operator name, address, and telephone number.
  - o Well name and number.
  - o Well location (¼¼, Sec., Twn, Rng, and P.M.).
  - Date well was placed in a producing status (date of first production for which royalty will be paid).
  - The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).
  - o The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.
  - o Unit agreement and/or participating area name and number, if applicable.
  - o Communitization agreement number, if applicable.
- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.
- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of Operations and Production.
- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid, and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

Page 7 of 7 Well: NBU 921-20C 11/8/2011

• All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.

- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office Petroleum Engineers will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports shall be submitted to the BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall be identified as the point of sale or allocation for royalty purposes.
- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.
- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.
- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover
  equipment shall be removed from a well to be placed in a suspended status without prior
  approval of the BLM Vernal Field Office. If operations are to be suspended for more than 30
  days, prior approval of the BLM Vernal Field Office shall be obtained and notification given
  before resumption of operations.
- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.
- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

Sundry Number: 23936 API Well Number: 43047507170000 FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

	STATE OF UTAH		FORM 9
1	DEPARTMENT OF NATURAL RESOURCE DIVISION OF OIL, GAS, AND MIN	<del></del>	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0575
SUNDF	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE		
	oposals to drill new wells, significantly or reenter plugged wells, or to drill horizor n for such proposals.		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 921-20C		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	9. API NUMBER: 43047507170000		
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th	h Street, Suite 600, Denver, CO, 80217	<b>PHONE NUMBER:</b> 3779 720 929-6	9. FIELD and POOL or WILDCAT: 5NATUERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0588 FNL 2261 FWL	COUNTY: UINTAH		
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NENW Section:	STATE: UTAH		
11. CHEC	K APPROPRIATE BOXES TO INDICAT	E NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
✓ NOTICE OF INTENT	ACIDIZE	ALTER CASING	CASING REPAIR
Approximate date work will start: 3/15/2012	<ul> <li>✓ CHANGE TO PREVIOUS PLANS</li> <li>☐ CHANGE WELL STATUS</li> </ul>	CHANGE TUBING  COMMINGLE PRODUCING FORMATIONS	☐ CHANGE WELL NAME ☐ CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	✓ DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
	OPERATOR CHANGE  PRODUCTION START OR RESUME	PLUG AND ABANDON  RECLAMATION OF WELL SITE	PLUG BACK RECOMPLETE DIFFERENT FORMATION
SPUD REPORT Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
	U TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
	WILDCAT WELL DETERMINATION	OTHER	OTHER:
The operator required formation (part of the approval for close production casing c	completed operations. Clearly show a ests approval to deepen the the Mesaverde Group). The Ced loop drilling option, surfact hange. All other aspects of the change. Please see the at	well to the Blackhawk Operator also requests e casing change and he previously approved	Approved by the Utah Division of Oil, Gas and Mining  Date: March 22, 2012  By: Date Control  By: Date
NAME (PLEASE PRINT) Jaime Scharnowske	<b>PHONE NUMBI</b> 720 929-6304	ER TITLE Regulartory Analyst	
SIGNATURE N/A	720 020 0004	DATE 3/15/2012	

NBU 921-20C Drilling Program
1 of 7

## Kerr-McGee Oil & Gas Onshore. L.P.

NBU 921-20C

Surface: 588 FNL / 2261 FWL NENW

Section 20 T9S R21E

Unitah County, Utah Mineral Lease: UTU-0575

#### **ONSHORE ORDER NO. 1**

#### **DRILLING PROGRAM**

# Estimated Tops of Important Geologic Markers: Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
	0 0 0	
Uinta	0 - Surface	
Green River	1,700'	
Birds Nest	1,981'	Water
Mahogany	2,491'	Water
Wasatch	5,078'	Gas
Mesaverde	8,061'	Gas
Sego	10,360'	Gas
Castlegate	10,442'	Gas
Blackhawk	10,813'	Gas
TVD	11,413'	
TD	11,413'	

#### 3. <u>Pressure Control Equipment</u> (Schematic Attached)

Please refer to the attached Drilling Program

#### 4. <u>Proposed Casing & Cementing Program:</u>

Please refer to the attached Drilling Program

NBU 921-20C Drilling Program
2 of 7

#### 5. <u>Drilling Fluids Program</u>:

Please refer to the attached Drilling Program

#### 6. <u>Evaluation Program</u>:

Please refer to the attached Drilling Program

#### 7. <u>Abnormal Conditions</u>:

Maximum anticipated bottom hole pressure calculated at 11413' TVD, approximately equals 7,533 psi (0.66 psi/ft = actual bottomhole gradient)

Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 5,074 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))

## 8. <u>Anticipated Starting Dates:</u>

Drilling is planned to commence immediately upon approval of this application.

#### 9. Variances:

Please refer to the attached Drilling Program. Onshore Order #2 – Air Drilling Variance

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- · Blowout Prevention Equipment (BOPE) requirements;
- · Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

NBU 921-20C Drilling Program
3 of 7

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

#### **Background**

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 12 1/4 inch hole for the first 200 feet, then will drill a 11inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 11 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

#### **Variance for BOPE Requirements**

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

#### **Variance for Mud Material Requirements**

Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

NBU 921-20C Drilling Program
4 of 7

#### Variance for Special Drilling Operation (surface equipment placement) Requirements

Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

#### **Variance for FIT Requirements**

KMG also respectfully requests a variance to Onshore Order 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). This well is not an exploratory well and is being drilled in an area where the formation integrity is well known. Additionally, when an FIT is run with the mud weight as required, the casing shoe frequently breaks down and causes subsequent lost circulation when drilling the entire depth of the well.

#### Conclusion

The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

#### 10. <u>Other Information:</u>

Please refer to the attached Drilling Program.

NBU 921-20C Drilling Program
5 of 7



Max anticipated Mud required

13.0 ppg

11,413' TVD

11,413' MD

# KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

**DRILLING PROGRAM** COMPANY NAME KERR-McGEE OIL & GAS ONSHORE LP DATE March 15, 2012 NBU 921-20C WELL NAME TD 11,413' 11,413' MD **FIELD** Natural Buttes **COUNTY** Uintah STATE Utah FINISHED ELEVATION 4,862 SURFACE LOCATION NENW 588 FNL 2261 FWL Sec 20 T 9S R 21E 40.027224 -109.576958 **NAD 83** Latitude: Longitude: OBJECTIVE ZONE(S) BLACKHAWK (Part of the Mesaverde Group) Regulatory Agencies: BLM (Minerals), BIA (Surface), UDOGM Tri-County Health Dept. ADDITIONAL INFO **GEOLOGICAL MECHANICAL HOLE CASING FORMATION** MUD LOGS **TOPS DEPTH** SIZE SIZE WEIGHT 14" 40' 12 1/4" 8-5/8", 28#, IJ-55, LTC Air mist 200' All water flows encountered while drilling will be reported to the appropriate agencies. 8-5/8", 28#, IJ-55, LTC Air mist Green River @ 1.700 Top of Birds Nest @ 1,981 Mahogany @ 2,491 Preset f/ GL @ 2,940' TVD Note: 11" surface hole will usually be drilled ±400' below the lost circulation zone (aka bird's nest). Drilled depth may be ±200' of the estimated set depth depending on the acutal depth of the loss zone. Wasatch @ 5.078 Mud logging program TBD 7-7/8" 4-1/2" 11.6# Water / Fresh Cased hole logging program from TD - surf csg HCP-110 Water Mud Ultra DQX/LTC csg 8.3-13.0 ppg Mverde @ 8,061' TVD 10,360' TVD Sego @ Castlegate @ 10,442' TVD MN5 @ 10,813' TVD

**Drilling Program** NBU 921-20C



#### **KERR-McGEE OIL & GAS ONSHORE LP**

#### **DRILLING PROGRAM**

CASING PROGRAM								DESIGN FACTORS			
										LTC	DQX
	SIZE	INT	ERVA	L	WT.	GR.	CPLG.	BURST	COLLAPSE	TE	ENSION
CONDUCTOR	14"	(	)-40'								
								3,390	1,880	348,000	N/A
SURFACE	8-5/8"	0	to	2,940	28.00	IJ-55	LTC	1.83	1.37	4.83	N/A
								10,690	8,650	279,000	367,000
PRODUCTION	4-1/2"	0	to	5,000	11.60	HCP-110	DQX	1.19	1.12		3.46
	4-1/2"	5,000	to	11,413'	11.60	HCP-110	LTC	1.19	1.12	4.68	

#### **Surface Casing:**

(Burst Assumptions: TD = 0.73 psi/ft = frac gradient @ surface shoe ppg)

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

Production casing:

(Burst Assumptions: Pressure test with 8.4ppg @ 9000 0.66 psi/ft = bottomhole gradient psi)

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

#### **CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80	1.15
Option 1		+ 0.25 pps flocele				
TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80	1.15
		+ 2% CaCl + 0.25 pps flocele				
SURFACE		NOTE: If well will circulate water t	o surface, op	tion 2 will b	e utilized	
Option 2 LEAD	2,440'	65/35 Poz + 6% Gel + 10 pps gilsonite	220	35%	11.00	3.82
		+ 0.25 pps Flocele + 3% salt BWOW			•	
TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80	1.15
		+ 0.25 pps flocele				
TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION LEAD	4,573'	Premium Lite II +0.25 pps	360	35%	12.00	3.38
		celloflake + 5 pps gilsonite + 10% gel				
		+ 0.5% extender				
TAIL	6,840'	50/50 Poz/G + 10% salt + 2% gel	1,610	35%	14.30	1.31
		+ 0.1% R-3			•	

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

#### **FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE

Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe

**PRODUCTION** 

Float shoe, 1 jt, float collar. 15 centralizers for a Mesaverde and 20 for a Blackhawk well.

centralizer on the first 3 joints and one every third joint thereafter.

#### ADDITIONAL INFORMATION

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

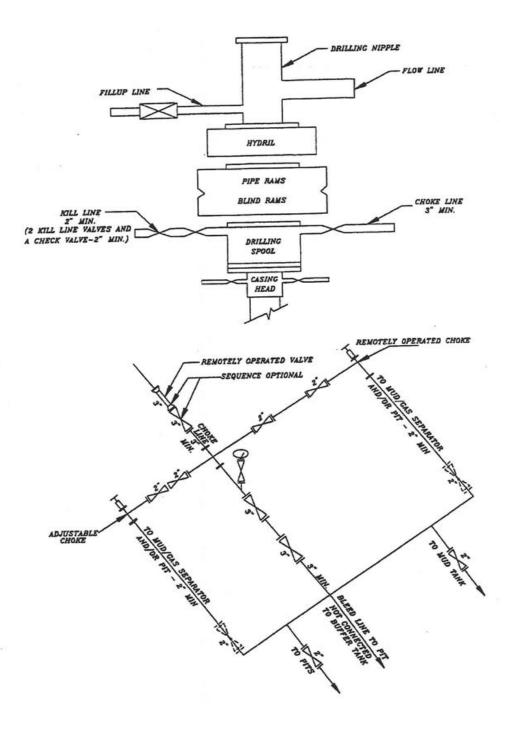
Surveys	will	be	taken	at	1,000'	minimum	intervals.

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

_	,	, ,		
DRILLING	ENGINEER:		DATE:	
		Nick Spence / Danny Showers / Chad Loesel	-	
DRILLING	SUPERINTENDENT:		DATE:	
		Kenny Gathings / Lovel Young	•	

<sup>\*</sup>Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

## EXHIBIT A NBU 921-20C



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

#### Requested Drilling Options:

Kerr-McGee will use either a closed loop drilling system that will require one pit and one cuttings storage area to be constructed on the drilling pad or a traditional drilling operation with one pit used for drilling and completion operations. The cuttings storage area will be used to contain only the de-watered drill cuttings and will be lined and bermed to prevent any liquid runoff. The drill cuttings will be buried in the completion pit once completion operations are completed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion operations pit will be lined with a synthetic material 20 mil or thicker and will be used for the completing of the wells on the pad or used as part of our Aandarko Completions Transportation System (ACTS). Using the closed loop drilling system will allow Kerr-McGee to decrease the amount of disturbance/footprint on location compared to a single large drilling/completions pit.

If Kerr-McGee does not use a closed loop drilling system, it will construct a traditional drilling/completions pit to contain drill cuttings and for use in completion operations. The pit will be lined with a synthetic material 20 mil or thicker. The drill cuttings will be buried in the pit using traditional pit closure standards.

RECEIVED: Mar. 15, 2012

Sundry Number: 24181 API Well Number: 43047507170000

	STATE OF UTAH		FORM 9
ı	DEPARTMENT OF NATURAL RESOURCE DIVISION OF OIL, GAS, AND MIN		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0575
SUNDR	Y NOTICES AND REPORTS	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
Do not use this form for pro current bottom-hole depth, I FOR PERMIT TO DRILL form	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 921-20C		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	<b>9. API NUMBER:</b> 43047507170000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th	9. FIELD and POOL or WILDCAT: 5NATERAL BUTTES		
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0588 FNL 2261 FWL	COUNTY: UINTAH		
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NENW Section: 2	STATE: UTAH		
11. CHECI	K APPROPRIATE BOXES TO INDICAT	E NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
✓ SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud: 3/21/2012	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
3/21/2012	TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
Report Bate.			
	WILDCAT WELL DETERMINATION	OTHER	OTHER:
MIRU TRIPLE A BU RAN 14" 36.7# SC	COMPLETED OPERATIONS. Clearly show a CKET RIG. DRILLED 20" CONI HEDULE 10 CONDUCTOR PIFIX. SPUD WELL LOCATION OF 11:30 HRS.	DUCTOR HOLE TO 40'. PE. CEMENT WITH 28	Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY March 28, 2012
NAME (PLEASE PRINT) Jaime Scharnowske	PHONE NUMBI		
SIGNATURE	720 929-6304	Regulartory Analyst  DATE	
N/A		3/27/2012	

	STATE OF UTAH		FORM 9
ı	DEPARTMENT OF NATURAL RESOUR DIVISION OF OIL, GAS, AND MI		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0575
SUNDR	RY NOTICES AND REPORTS	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
Do not use this form for pro current bottom-hole depth, I FOR PERMIT TO DRILL form	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 921-20C		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	<b>9. API NUMBER:</b> 43047507170000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th	9. FIELD and POOL or WILDCAT: 29-65NATURAL BUTTES		
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0588 FNL 2261 FWL	COUNTY: UINTAH		
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NENW Section: 2	STATE: UTAH		
11. CHECI	K APPROPRIATE BOXES TO INDICA	ATE NATURE OF NOTICE, RE	PORT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATION	s CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
	TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
✓ DRILLING REPORT Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
3/31/2012	WILDCAT WELL DETERMINATION	OTHER	OTHER:
12 DESCRIBE PROPOSED OR	COMPLETED OPERATIONS. Clearly show	/ all pertinent details including dat	<u>'</u>
MIRU AIR RIG ON M RAN SURFACE CAS	ARCH 28, 2012. DRILLED SUSING AND CEMENTED. WELL OF CEMENT JOB WILL BE INC COMPLETION REPORT	JRFACE HOLE TO 2,95 IS WAITING ON ROTAR CLUDED WITH WELL	O' Accepted by the
NAME (PLEASE PRINT)	PHONE NUM		
Jaime Scharnowske	720 929-6304	Regulartory Analyst	
SIGNATURE N/A		<b>DATE</b> 4/2/2012	

#### STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM							
Operator:	KERR McGEE OIL & GAS O	NSHORE LP	Operator Account Number:	N 2995			
Address:	P.O. Box 173779						
	city DENVER						
	etate CO	zin 80217	Phone Number	(720) 929-6304			

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County			
4304750717	NBU 921-20C		NBU 921-20C NEN				98	21E UINTAH		
Action Code	Current Entity Number	New Entity Number	S	Spud Date		Entity Assignment Effective Date				
В	99999	2900	3	3/21/2012			30/2012			
	TRIPLE A BUCKET F									

MATAIN O

API Number	Well I	Well Name		QQ Sec Twp			Rng County		
Action Code	Current Entity Number	New Entity Number	S	pud Da	l te		y Assignment fective Date		
omments:									

Well 3

API Number	Well	lame	QQ	Sec	Twp	Rng	County	
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date		
Comments:				<del></del>	·*		·	

Title

#### **ACTION CODES:**

- A Establish new entity for new well (single well only)
- **B** Add new well to existing entity (group or unit well)
- C Re-assign well from one existing entity to another existing entity
- D Re-assign well from one existing entity to a new entity

  E Other (Explain in 'comments' section ECEIVED

MAR 2 7 2012

JAIME SCHARNOWSKE	
lame (Please Print)	
Signature	
Signature	
REGULATORY ANALYST	3/27/2012

Date

(5/2000)

## State of Utah - Notification Form

Operator <u>Anadarko Petroleum</u> Rig Name/# <u>PIONEER 54</u>
Submitted By <u>KALIB FORD</u> Phone Number <u>435-790-2921</u>
Well Name/Number <u>NBU 921-20C</u>
Qtr/Qtr <u>NE NW</u> Section <u>20</u> Township <u>9S</u> Range 21E
Lease Serial Number <u>UTU0575</u>
API Number 4304750717

Casing – Time casing run starts, not cen	nenting times.
Production Casing Other	
Date/Time <u>4/20/12</u> <u>12</u> AM $\geq$	PM
BOPE Initial BOPE test at surface casing points. Other	ooint
Date/Time AM _ PM _	RECEIVED APR 2 0 2012
Rig Move Location To:	DIV. OF OIL, GAS & MINING
Date/Time AM	PM
Remarks	

Sundry Number: 25025 API Well Number: 43047507170000

	STATE OF UTAH		FORM 9
ı	DEPARTMENT OF NATURAL RESOURCE DIVISION OF OIL, GAS, AND MIN		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0575
SUNDR	RY NOTICES AND REPORTS	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
Do not use this form for pro current bottom-hole depth, I FOR PERMIT TO DRILL form	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-20C
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.		9. API NUMBER: 43047507170000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th	h Street, Suite 600, Denver, CO, 80217	<b>PHONE NUMBER:</b> 720 929-6	9. FIELD and POOL or WILDCAT: 5NATERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0588 FNL 2261 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH Qtr/Qtr: NENW Section: 2	HIP, RANGE, MERIDIAN: 20 Township: 09.0S Range: 21.0E Merio	dian: S	STATE: UTAH
11. CHECI	K APPROPRIATE BOXES TO INDICAT	TE NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	New construction
	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
	TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
4/21/2012	WILDCAT WELL DETERMINATION	OTHER	OTHER:
MIRU ROTARY RI APRIL 18, 2012. CEMENTED PRODUC 21, 2012 @ 00:00 F	COMPLETED OPERATIONS. Clearly show a G. FINISHED DRILLING FROI RAN 4-1/2" 11.6# P-110 PRO CTION CASING. RELEASED PIO HRS. DETAILS OF CEMENT JO COMPLETION REPORT. WELL COMPLETION ACTIVITIES	M 2950' TO 11,426' ON ODUCTION CASING. ONEER RIG #54 ON APRIL OB WILL BE INCLUDED IS WAITING ON FINAL	depths, volumes, etc.  Accepted by the Utah Division of
NAME (PLEASE PRINT) Gina Becker	<b>PHONE NUMB</b> 720 929-6086	ER TITLE Regulatory Analyst II	
SIGNATURE		DATE	
N/A		4/24/2012	

	STATE OF UTAH		FORM 9
ı	DEPARTMENT OF NATURAL RESOURCE DIVISION OF OIL, GAS, AND MIN		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0575
SUNDR	Y NOTICES AND REPORTS	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
	posals to drill new wells, significantly reenter plugged wells, or to drill horizo n for such proposals.		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-20C
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.		9. API NUMBER: 43047507170000
3. ADDRESS OF OPERATOR: P.O. Box 173779 1099 18th	n Street, Suite 600, Denver, CO, 80217	<b>PHONE NUMBER:</b> 73779 720 929-6	9. FIELD and POOL or WILDCAT: 5M&TUTRAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0588 FNL 2261 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH	HIP, RANGE, MERIDIAN: 20 Township: 09.0S Range: 21.0E Meri	dian: S	STATE: UTAH
11. CHECI	K APPROPRIATE BOXES TO INDICA	TE NATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
SPUD REPORT	✓ PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
	TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL
DRILLING REPORT Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
5/29/2012	WILDCAT WELL DETERMINATION	OTHER	OTHER:
THE SUBJECT WEL 1630 HRS. THE CHR	COMPLETED OPERATIONS. Clearly show a LACED ON PRODUCE ON PRODUCE ON OLOGICAL WELL HISTOR THE WELL COMPLETION R	CTION ON 05/29/2012 AT LY WILL BE SUBMITTED	Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY May 30, 2012
NAME (PLEASE PRINT) Sheila Wopsock	PHONE NUMB 435 781-7024	ER TITLE Regulatory Analyst	
SIGNATURE	100 101 1024	DATE	
N/A		5/30/2012	

RECEIVED: May. 30, 2012

Sundry Number: 27514 API Well Number: 43047507170000

	STATE OF UTAH			FORM 9
ı	DEPARTMENT OF NATURAL RESOUR DIVISION OF OIL, GAS, AND MI			5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0575
SUNDR	Y NOTICES AND REPORTS	ON	WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
Do not use this form for pro current bottom-hole depth, I FOR PERMIT TO DRILL form	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES			
1. TYPE OF WELL Gas Well				8. WELL NAME and NUMBER: NBU 921-20C
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.			9. API NUMBER: 43047507170000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th	n Street, Suite 600, Denver, CO, 802		<b>NE NUMBER:</b> 9 720 929-6	9. FIELD and POOL or WILDCAT: 5NATERAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0588 FNL 2261 FWL				COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH	HIP, RANGE, MERIDIAN: 20 Township: 09.0S Range: 21.0E Mei	ridian:	S	STATE: UTAH
11. CHECI	K APPROPRIATE BOXES TO INDICA	ATE NA	ATURE OF NOTICE, REPOR	RT, OR OTHER DATA
TYPE OF SUBMISSION			TYPE OF ACTION	
	ACIDIZE		LTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	□ c	HANGE TUBING	CHANGE WELL NAME
	CHANGE WELL STATUS	□ c	OMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	☐ FI	RACTURE TREAT	☐ NEW CONSTRUCTION
·	OPERATOR CHANGE	□ р	LUG AND ABANDON	PLUG BACK
SPUD REPORT	PRODUCTION START OR RESUME		ECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION		IDETRACK TO REPAIR WELL	TEMPORARY ABANDON
✓ DRILLING REPORT	L TUBING REPAIR		ENT OR FLARE	☐ WATER DISPOSAL ☐
Report Date: 7/6/2012		□ s	I TA STATUS EXTENSION	APD EXTENSION
17072012	WILDCAT WELL DETERMINATION	۰ ⊔	THER	OTHER:
	COMPLETED OPERATIONS. Clearly show			Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY July 10, 2012
NAME (PLEASE PRINT) Jaime Scharnowske	<b>PHONE NUM</b> 720 929-6304	IBER	TITLE Regulartory Analyst	
SIGNATURE	. 20 020 0004		DATE	
N/A			7/6/2012	

Form 3160-4

## **UNITED STATES**

FORM APPROVED

(August 2007)				TMENT ( U OF LA)										31, 2010
	WELL (	OMPL	ETION C	R REC	OMPLE	TION R	EPORT	AND LO	G			ase Serial N	lo.	
la. Type of	f Well	Oil Well	🛭 Gas	Well [	Dry [	Other	<del></del>						ttee or	Tribe Name
b. Type of	f Completion	☑ N Othe	ew Well	☐ Work (	Over [	] Deepen	☐ Plu	g Back [	Diff. R	Resvr.	7. U	nit or CA A	greeme	ent Name and No.
2. Name of						: CARA I					8. Le	TU63047A ase Name a	nd We	ILNo.
	MĈGEE OIL 1099 18TI				ı.mahler@	<u> </u>		o. (include a	rea code	)		BU 921-20 PI Well No.	C	<b>/</b> 
	DENVER, of Well (Re	CO 802	02		anaa with	P	h: 720-92	9-6029					-1 - T	43-047-50717
At surfa			2261FWL				-	·)·			N	ield and Pod ATURAL B	UTTE	S .
	rod interval r							t, 109.5769	58 W Lo	on	11. S	ec., T., R., I Area Sec	M., or 1 20 TS	Block and Survey S R21E Mer SLB
At total	depth NEI	w <b>S</b> S	NL 226	VL 40.0272	224 N Lat,	109.576	958 W Lo	d HB	N HE			County or Pa	rish	13. State UT
14. Date Sp 03/21/2	oudded		15. D	ate T.D. Re /18/2012			16. Date	Completed		<u> </u>	17. E	Elevations (I 486	OF, KE 2 GL	3, RT, GL)*
18. Total D	epth:	MD TVD	11426 11422		). Plug Ba	ck T.D.:	MD TVD	1136 1135		20. De	pth Brio	ige Plug Set		MD TVD
21. Type E HDIL/Z	lectric & Oth DL/CNGR-C	er Mecha BL/GR/0	nical Logs R CCL/TEMP	un (Submit	copy of ea	ich)		2	Was 1	well core DST run? tional Su	•	⊠ No [	∃ Yes	(Submit analysis) (Submit analysis) (Submit analysis)
23. Casing at	nd Liner Reco	ord (Repo	rt all strings	set in well,	<del></del>		*			·				
Hole Size	Size/G	rade	Wt. (#/ft.)	Top (MD)	Botto (MD	1 ~	e Cementer Depth	No. of S Type of C		Slurry (BE		Cement T	op*	Amount Pulled
20.000		000 STL	36.7	<del></del>	0	40		<u> </u>	28					
11.000 7.875		25 IJ-55 0 P-110	28.0 11.6			933 407	<del></del>	ļ	570	<del></del>			0 470	
1.010	4.50	0 P-1 10	11.0		0 11	407			2493	<del>' </del>			/4/0	
24. Tubing			<del></del>		. Т		<del></del>			Г				
	Depth Set (M		acker Depth	(MD)	Size I	Depth Set	(MD) I	acker Depth	(MD)	Size	De	pth Set (MD	)) ]	Packer Depth (MD)
2.375 25. Produci		1000				26 Perfo	ration Rec	ord		<u> </u>				
	ormation		Тор		Bottom		Perforated	····	Т	Size	Τ.	lo. Holes		Perf. Status
A)	MESAVE	RDE	тор	9432	11198		1 Ciloraccu	9432 TO 1	1198	0.3			OPEN	<del></del>
В)						*****	<del>~~</del> ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~				<u> </u>		<u> </u>	<del></del>
C)														
D)														
27. Acid, Fi	racture, Treat	ment, Cer	nent Squeeze	e, Etc.					·					
	Depth Interve							mount and T						
	943	2 TO 11	198 PUMP 1	14,270 BBL	S SLICK H2	20 & 190,2	285 LBS 30	50 TLC SAN	D & 48,0	29 LBS 3	0/50 W	HITE SAND		
					<del></del>									
								· · · · · · · · · · · · · · · · · · ·	····	<del>,</del>				· · · · · · · · · · · · · · · · · · ·
28. Product	ion - Interval	A		<del></del>								********		
Date First	Test	Hours	Test	Oil	Gas	Water		ravity	Gas	***************************************	Producti	on Method		······································
Produced 05/29/2012	Date 06/02/2012	Tested 24	Production	BBL 0.0	MCF 2849.0	BBL 408	Corr.	API	Gravity	y 		FLOW	S FRO	M WELL
Choke Size	Tbg. Press. Flwg. 0	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:C Ratio		Well S	tatus				
20/64	SI	2521.0		0	2849	40	8		F	PGW				**** · · · · · · · · · · · · · · · · ·
28a. Produc	tion - Interva	1 B												····
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil G Corr.	ravity API	Gas Gravit	у	Producti	on Method		

24 Hr. Rate

Tbg. Press. Flwg. SI

Choke Size

Oil BBL

Gas MCF

Water BBL

(See Instructions and spaces for additional data on reverse side)
ELECTRONIC SUBMISSION #143416 VERIFIED BY THE BLM WELL INFORMATION SYSTEM
\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* 2 5 2012

Well Status

Gas:Oil Ratio

28b. Produ	uction - Inter	val C	<del> </del>	<del></del>			<del> </del>					
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API		Jas Gravity	Production Method		
1100000	J. J	Tested		DDL	MOI	BBL	Coll. All		Jiavity			
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	V	Well Status			
28c. Produ	iction - Inter	val D			· · · · · · · · · · · · · · · · · · ·				<del> </del>	······································	<del></del>	
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API		Jas Gravity	Production Method		
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	V	Well Status			-
29. Dispos		(Sold, used	for fuel, vent	ed, etc.)	<u></u>		<u></u>					· · · · · · · · · · · · · · · · · · ·
		s Zones (In	clude Aquife	rs):				·	31. For	mation (Log) Mar	kers	
Show a	all important	zones of po	orosity and c	ontents ther	reof: Cored ne tool oper	intervals and and and and and	all drill-stem shut-in pressu	res				
	Formation		Тор	Bottom	·	Description	ns, Contents, e	etc.		Name		Top Meas. Depth
The fir surfac LTC o	rst 210? of e hole was	the surface drilled with from 5015	h an 11? bit 5? to 11,407	irilled with DQX P-1	i 10 csa w	it. The remai as run from s hronological v	urface to 501	5';	BIF MA WA	EEN RIVER RD'S NEST HOGANY SATCH SAVERDE		1763 2049 2471 5091 8089
33. Circle	enclosed att	achments:						<del> </del>				
			s (1 full set re	q'd.)		2. Geologic	Report		3. DST Rep	port	4. Direction	nal Survey
5. Sur	ndry Notice	for plugging	and cement	verification	1	6. Core Ana	lysis		7 Other:			
34. I herel	by certify that	t the forego	oing and attac	hed inform	ation is co	mplete and cor	rect as determ	ined from	ı all available	records (see attac	ched instruction	ons):
			Elect			3416 Verified OIL & GAS				stem.		
Name	(please prin	) CARA M	AHLER				Title	AUTHO	RIZED REF	PRESENTATIVE		
Signat	ture	(Electron	nic Submiss	on)			Date	07/19/2	012			
Title 18 U	J.S.C. Section ited States an	n 1001 and ' ny false, fict	Title 43 U.S.	C. Section ulent states	1212, make nents or rej	e it a crime for presentations a	any person kn s to any matter	owingly r within i	and willfully ts jurisdiction	to make to any de	epartment or a	gency

## **Operation Summary Report**

Well: NBU 921-20C Spud Date: 3/29/2012

Project: UTAH-UINTAH Site: NBU 921-20C Rig Name No: PIONEER 54/54, CAPSTAR 310/310

Event: DRILLING Start Date: 3/15/2012 End Date: 4/20/2012

	KB @4,881.00usft (	above Mean S	ea	UWI: NI	E/NW/0/9	/S/21/E/20/0/0/26/PM/I	N/588/W/0/2261/0/0
vel) Date	Time	Duration	Phase	Code	Sub	P/U MD From	n Operation
	Start-End	(hr)		100	Code	(usft)	
3/28/2012	20:00 - 0:00	4.00	MIRU	21	С	Р	RIG DN ON BON 1023-6K1CS & WAIT ON DAYLIGHT TO MAKE FIELD MOVE
3/29/2012	0:00 - 6:00	6.00	MIRU	21	С	P	WAIT ON DAYLIGHT TO MOVE
	6:00 - 14:30	8.50	MIRU	01	В	Р	MOVE RIG 23 MILES & RIG UP //// 8 TRUCKS & 1 FORKLIFT /// DERRICK IN AIR @ 13:00 /// RELEASE LAST TRUCK @ 17:30
	14:30 - 17:30	3.00	PRPSPD	14	Α	P	WELD ON CONDUCTOR & RIG UP FLOW LINE
	17:30 - 19:00	1.50	PRPSPD	80	Α	Z	WORK ON FORKLIFT ( HYDRUILIC LINE )
	19:00 - 20:00	1.00	PRPSPD	06	Α	P	PICK UP 12.25" BIT & MUD MOTOR
	20:00 - 22:00	2.00	DRLSUR	02	В	P	DRLG 12.25" SURFACE HOLE F/ 49'- 215'
	22:00 - 22:30	0.50	DRLSUR	06	Α	P	TOOH & LAY DN 12.25" BIT
	22:30 - 0:00	1.50	DRLSUR	06	Α	Р	PU 11" BIT & DIR TOOLS, SCRIBE & TIH
3/30/2012	0:00 - 0:30	0.50	DRLSUR	06	Α	Ρ .	TIH W/ 11" BIT & DIR TOOLS
	0:30 - 11:30 11:30 - 12:00	0.50	DRLSUR	02	В	P P	DRLG 11" SURFACE HOLE F/ 215'- 1880'  ROP= 1665' @ 151 FPH  WOB= 24-28K  RPM= 55/105  SPP= 1300/1000  GPM= 595  TRQ=2800/2200  PU/SO/RT=95/72/88  NO LOSSES  SERVICE RIG & EQUIPMENT
	12:00 - 22:30	10.50	DRLSUR	02	В	P	DRLG 11" SURFACE HOLE F/ 1880'- 2950' ROP= 1070' @ 102 FPH WOB= 24-28K RPM= 55/105 SPP= 1450/1100 GPM= 595 TRQ=3000/2600 PU/SO/RT=121/97/110 NO LOSSES
	22:30 - 23:00	0.50	DRLSUR	05	F	P	CIRC & COND. HOLE FOR 8.625" CSG
	23:00 - 0:00	1.00	DRLSUR	06	Α	Р	LAY DOWN DRILL STRING
3/31/2012	0:00 - 3:00	3.00	DRLSUR	06	Α	P	LAY DOWN DRILL STRING & DIR TOOLS
	3:00 - 5:30 5:30 - 6:00	2.50 0.50	CSG CSG	12 05	C F	P P	PJSM /// RUN 66 JT'S, 8.625", J-55, 28#, LT&C CSG /// SHOE SET @ 2923' & BAFFLE @ 2877' CIRC 8.625" SURFACE CSG @ 2923'
	6:00 - 7:00	1.00	CSG	12	E	Р	PJSM /// TEST LINES TO 2000 PSI /// PUMP 40 BBL'S
							WATER FOLLOWED BY 20 BBL'S GEL WATER PRE FLUSH /// LEAD= 220 SX CLASS G CMT @ 11.0 WT & 3.82 YIELD /// TAIL= 200 SX CLASS G CMT @ 15.8 WT & 1.15 YIELD /// DROP PLUG & DISPLACE W/ 180 BBL'S WATER /// PLUG DN @ 06:51 03/31/2012 /// BUMP PLUG W/ 1000 PSI /// FINAL LIFT =480 PSI /// CHECK FLOATS - HELD W/ 1 BBL BACK /// 24 BBLS CMT TO SURFACE
	7:00 - 8:00	1.00	CSG	14	Α	Р	CUT OFF CONDUCTOR & HANG 8.625" CSG

## Operation Summary Report

Well: NBU 921-20C Spud Date: 3/29/2012 Project: UTAH-UINTAH Site: NBU 921-20C Rig Name No: PIONEER 54/54, CAPSTAR 310/310 Event: DRILLING End Date: 4/20/2012 Start Date: 3/15/2012

St	Time art-End - 9:00 - 10:00 - - - 6:00 - 18:00	Duration (hr) 1.00	Phase CSG RDMO	Code	Sub Code	P/U *	MD From Operation (usft)  RUN 200' OF 1" PIPE DOWN BACKSIDE & PUMP TOP OUT W/ 150 SX CLASS G CMT @ 15.8 WT & 1.15
8:00 9:00 0:00	- 9:00 - 10:00 - - - 6:00	1.00			E		RUN 200' OF 1" PIPE DOWN BACKSIDE & PUMP TOP OUT W/ 150 SX CLASS G CMT @ 15.8 WT & 1.15
0:00	- - - 6:00		RDMO	01	E		VICI D + 40/10
		6,00				Р	YIELD + 4% cacl2  CLEAN PITS & RIG DOWN /// RELEASE RIG @ 10:00  03/31/2012 TO THE NBU 1022-12B4CS
		6,00					
		6,00					
6:00	- 18:00		DRLPRO	21	С	Р	WAITING FOR DAYLIGHT
		12.00	DRLPRO	01	Α	P	SAFETY MEETING, 12 MILE RIG MOVE WITH WESTROC AND J&C CRANE, 7 HAUL TRUCKS, 2 FORKLIFTS, 2 TRUCK PUSHERS, DERRICK RAISED @ 1730, TRUCKS AND CRANE RELEASED AT 1800
	- 20:00	2.00	DRLPRO	01	В	Р	RIG UP TOP DRIVE, SERVICE LOOP
		1.00	DRLPRO	14	Α	Р	NIPPLE UP STRATA EQUIPMENT
		3.00	DRLPRO	14	Α	P	NIPPLE UP BOPE
0:00 4:00		4.00	DRLPRV	15 15	A	P P	HELD SAFETY MEETING WITH RIG & TESTER & TES BOPE, RAMS & ALL VALVES 250 LOW 5000 HIGH, ANN 2500, SURFACE CASING TO 1500 FOR 30 MIN TEST STRATA EQUIPMENT
5:00							INSTALL WEAR BUSHING
6:00	- 10:00	4.00	DRLPRV	06	A	Р	SAFETY MEETING WITH KIMZEY LAY DOWN TRUCK, PICKED UP BHA, HWDP, AND DRILL PIPE.
10:00	- 10:30	0.50	DRLPRV	09	Α	Р	CUT 100' OF DRILL LINE
10:30	- 11:00	0.50	DRLPRV	07	Α	P	FINAL PRESPUD INPECTION AND LUBRIACTED RIG
11:00	- 11:30	0.50	DRLPRV	22	L	Z	CHANGED OUT LEAKING STRATA BEARING
		2.00	DRLPRV	02	F	Þ	DRILLED OUT SHOE TRACK, CEMENT @2888', BAFFLE@2893', SHOE@2939'
13:30	- 0:00	10.50	DRLPRV	02	В	Р	CLOSED LOOP SYSTEM  DRILL F/ 2960' TO 4180', 1220' @ 116' PH  WOB /20-23  RPM TOP DRIVE 60, MOTOR-135  SPM 180 GPM 527  MW 9.0 VIS 32  TRQ ON/OFF = 7000-5000 K  PSI ON /OFF 1800-1600, DIFF 100-500  PU/SO/RT = 120/110/115  SLIDE = 28' IN 0.42 HRS = 66,7' PH  ROT = 1192' IN 10.08 HRS = 118' PH  STRATA - OFF LINE  NOV- ON LINE 2- DEWATERING
	20:00 21:00 0:00 4:00 5:00 6:00 10:00 11:00 11:30	21:00 - 0:00 0:00 - 4:00 4:00 - 5:00 5:00 - 6:00 6:00 - 10:00	20:00 - 21:00	20:00 - 21:00	20:00 - 21:00	20:00 - 21:00	20:00 - 21:00

7/10/2012

3:26:14PM

0 DRILL FLARE, 15' CONN FLARE

## **Operation Summary Report**

Well: NBU 921-20C		Spud Date: 3/29/2012						
Project: UTAH-UINTAH	Site: NBU 921-20C	Rig Name No: PIONEER 54/54, CAPSTAR 310/310						
Event: DRILLING	Start Date: 3/15/2012	End Date: 4/20/2012						
Active Datum: RKB @4,881.00usft (about Level)	ove Mean Sea UWI: NE/NW/0/9/S/21/E/20/0	0/0/26/ <b>PM/N</b> /588/W/0/2261/0/0						
Date Time Start-End	Duration Phase Code Sub P/U Code	MD From Operation (usft)						

vel)	<b>↓</b>	Lacas	Dhe	0.32	7. J. 191	Dail	
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U MD From	Operation
4/13/2012	0:00 - 10:30	10.50	DRLPRO	02	B	P (usft)	CLOSED LOOP SYSTEM  DRILL F/ 4180' TO 5318', 1138' @108.3' PH  WOB /23  RPM TOP DRIVE 60, MOTOR-135  SPM 180 GPM 527  MW 9.0 VIS 32  TRQ ON/OFF = 7000-5000 K  PSI ON /OFF 1800-1600, DIFF 100-500  PU/SO/RT = 120/110/115  SLIDE = 81' IN 1.33 HRS = 60.9' PH  ROT = 1057' IN 9.17 HRS =115' PH  STRATA - OFF LINE  NOV- ON LINE 2- DEWATERING  20.2' S & 3.44' W OF TARGET CENTER
	10:30 - 11:00	0.50	DDI DDO	22		Z	0 DRILL FLARE, 5' CONN FLARE
	11:00 - 15:00 15:00 - 15:30	0.50	DRLPRO DRLPRO	22 02	В	P .:	CHANGE OUT STRATA ROTATING HEAD RUBBER CLOSED LOOP SYSTEM DRILL F/ 5318' TO 5697', 379' @94.7' PH WOB /23 RPM TOP DRIVE 60, MOTOR-135 SPM 180 GPM 527 MW 9.0 VIS 32 TRQ ON/OFF = 7000-5000 K PSI ON /OFF 1800-1600, DIFF 100-500 PU/SO/RT = 120/110/115 SLIDE = ROT = 100% STRATA - OFF LINE NOV- ON LINE 2- DEWATERING 20.2' S & 3.44' W OF TARGET CENTER 0 DRILL FLARE, 5' CONN FLARE LUBRICATE RIG
	15:30 - 0:00	8.50	DRLPRO	02	В	P	CLOSED LOOP SYSTEM  DRILL F/ 5697' TO 6625', 928' @109' PH  WOB /24  RPM TOP DRIVE 60, MOTOR-135  SPM 180 GPM 527  MW 8.8 VIS 29  TRQ ON/OFF = 7000-5000 K  PSI ON /OFF 1800-1600, DIFF 100-500  PU/SO/RT = 120/110/115  SLIDE = 32' IN 0.50 HRS@64' PH  ROT = 896' IN 8.0 HRS@112' PH  STRATA - OFF LINE  NOV- ON LINE 2- DEWATERING  18.3' S & 23.8' W OF TARGET CENTER  0 DRILL FLARE, 5' CONN FLARE

7/10/2012 3:26:14PM

## **Operation Summary Report**

Well: NBU 921-	20C					Spua L	Date: 3/29/2012				
Project: UTAH-U	JINTAH		Site: NBU	921-20C			Rig Name No: PIONEER 54/54, CAPSTAR 310/310				
vent: DRILLIN	G		Start Date	e: 3/15/20	12		End Date: 4/20/2012				
Active Datum: R Level)	KB @4,881.00usft (a	bove Mean Se	a	UWI: NE	E/NW/0/9.	/S/21/El/20/0/0/26/	S/PM/N/588/W/0/2261/0/0				
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code		From Operation				
4/14/2012	0:00 - 12:30	12.50	DRLPRO	02	В	Р	CLOSED LOOP SYSTEM DRILL F/ 6625' TO 7689', 1064' @85.1' PH WOB /25 RPM TOP DRIVE 60, MOTOR-135 SPM 180 GPM 527 MW 8.8 VIS 29 TRQ ON/OFF = 7000-5000 K PSI ON /OFF 1800-1600, DIFF 100-500 PU/SO/RT = 185/164/170 SLIDE = 51' IN 1.17 HRS@43.5" PH ROT = 1013' IN 11.33 HRS@89.4' PH				
							STRATA - OFF LINE NOV- ON LINE 2- DEWATERING 18.3' N & 23.8' W OF TARGET CENTER 0 DRILL FLARE, 5' CONN FLARE				
	12:30 - 13:00	0.50	DRLPRO	07	Α	P	LUBRICATE RIG, BOP DRILL 70 SEC, FUNCTION ANN & HCR				
4/15/2012	13:00 - 0:00 0:00 - 13:00	11.00	DRLPRO	02	В	P	CLOSED LOOP SYSTEM DRILL F/ 7689' TO 8500', 811' @73.7' PH WOB /25 RPM TOP DRIVE 60, MOTOR-135 SPM 180 GPM 527 MW 9.0 VIS 32 TRQ ON/OFF = 7000-5000 K PSI ON /OFF 1800-1600, DIFF 100-500 PU/SO/RT = 185/164/170 SLIDE = ROT = 100% STRATA - ONLINE @8000' 60 PSI DRILLING, 60 PSI CONNECTION NOV- ON LINE 2- CONVENTIONAL 60.7' N & 30.5' W OF TARGET CENTER 5' DRILL FLARE, 15' CONN FLARE CLOSED LOOP SYSTEM				
							DRILL F/ 8500' TO 9396', 896' @68.9' PH WOB /25 RPM TOP DRIVE 60, MOTOR-135 SPM 180 GPM 527 MW 9.0 VIS 32 TRQ ON/OFF = 7000-5000 K PSI ON /OFF 1800-1600, DIFF 100-500 PU/SO/RT = 185/164/170 SLIDE = ROT = 100% STRATA - ONLINE @8000' 300-400 PSI DRILL, 450 PSI CON NOV- ON LINE 2- CONVENTIONAL 39.9' N & 21.6' W OF TARGET CENTER				
	13:00 - 13:30	0.50	DRI DDA	07	Δ	P	15-20' DRILL FLARE, 20'-30' CONN FLARE RIG SERVICE				
	13:00 - 13:30	0.50	DRLPRO	07	Α	P	RIG SERVICE				

## **Operation Summary Report**

Well: NBU 921-	20C						pud Date: 3/29/2012
Project: UTAH-I	JINTAH		Site: NBU	J 921-20C	:		Rig Name No: PIONEER 54/54, CAPSTAR 310/310
Event: DRILLIN	G		Start Dat	e: 3/15/20	12		End Date: 4/20/2012
Active Datum: F Level)	KB @4,881.00usft (a	bove Mean Se	ea	UWI: NE	E/NW/0/9	/S/21/E/20/0	0/26/PM/N/588/W/0/2261/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (usft)
	13:30 - 0:00	10.50	DRLPRO	02	В	Р	CLOSED LOOP SYSTEM
							DRILL F/ 9396' TO 9875', 479' @46' PH
							WOB /25
							RPM TOP DRIVE 60, MOTOR-135
							SPM 180 GPM 527 MW 9.5 VIS 40
							TRQ ON/OFF = 8000-6000 K
							PSI ON /OFF 2400-2200,
							DIFF 100-500
							PU/SO/RT = 220/185/200
							SLIDE =
							ROT = 100%
							STRATA - ONLINE @8000'
							200-300 PSI DRILL, 350 PSI CON
							NOV- ON LINE 2- CONVENTIONAL
							39.9' N & 21.6' W OF TARGET CENTER 15-20' DRILL FLARE, 20'-30' CONN FLARE
4/16/2012	0:00 - 14:30	14.50	DRLPRO	02	В	Р	CLOSED LOOP SYSTEM
471072012	14.00	14.00	DICEITO	02	U	'	DRILL F/ 9875' TO 10439',564' @38.9' PH
							WOB /25-28
							RPM TOP DRIVE 60, MOTOR-135
							SPM 200 GPM 586
							MW 9.5 VIS 40
							TRQ ON/OFF = 8000-6000 K
							PSI ON /OFF 2400-2200,
							DIFF 100-500
							PU/SO/RT = 220/185/200
							SLIDE =
							ROT = 100% STRATA - ONLINE @8000'
							200-300 PSI DRILL, 350 PSI CON
							NOV- ON LINE 2- CONVENTIONAL
							39.9' N & 21.6' W OF TARGET CENTER
							15-20' DRILL FLARE, 20'-30' CONN FLARE
	14:30 - 15:00	0.50	DRLPRO	07	Α	Р	LUBRICATE RIG, BOP DRILL 70 SEC, FUNCTION ANN
							& HCR
	15:00 - 0:00	9.00	DRLPRO	02	В	Р	CLOSED LOOP SYSTEM
							DRILL F/10439' TO 10710',271'@30'PH
							WOB /25-28
							RPM TOP DRIVE 60, MOTOR-135
							SPM 200 GPM 586 MW 9.5 VIS 40
							TRQ ON/OFF = 8000-6000 K
							PSI ON /OFF 2400-2200,
							DIFF 100-500
							PU/SO/RT = 220/185/200
							SLIDE =
							ROT = 100%
							STRATA - ONLINE @8000'
							200-300 PSI DRILL, 350 PSI CON
							NOV- ON LINE 2- CONVENTIONAL
							5.1' S & 7.3' W OF TARGET CENTER
							15-20' DRILL FLARE, 20'-30' CONN FLARE

## **Operation Summary Report**

Well: NBU 921-2	20C							Spud Date: 3/29/2012
Project: UTAH-U	INTAH			Site: NBU	921-200	;		Rig Name No: PIONEER 54/54, CAPSTAR 310/310
Event: DRILLING	3			Start Date	: 3/15/20	12		End Date: 4/20/2012
Active Datum: R Level)	KB @4,8	81.00usft (ab	ove Mean S	Sea Sea	UWI: NI	E/NW/0/9	9/S/21/E/20/	0/0/26/PM/N/588/W/0/2261/0/0
Date		Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (usft)
4/17/2012	0:00	- 9:00	9.00	DRLPRO	02	В		CLOSED LOOP SYSTEM
								DRILL F/10710' TO 10799',89'@9.8'PH
								WOB /28
								RPM TOP DRIVE 60, MOTOR-135
								SPM 200 GPM 586 MW 9.5 VIS 40
								TRQ ON/OFF = 8000-6000 K
								PSI ON /OFF 2400-2200,
								DIFF 100
								PU/SO/RT = 220/185/200
								SLIDE =
								ROT = 100%
								STRATA - ONLINE @8000'
								200-300 PSI DRILL, 350 PSI CON
								NOV- ON LINE 2- CONVENTIONAL
								5.1' S & 7.3' W OF TARGET CENTER
								15-20' DRILL FLARE, 20'-30' CONN FLARE
	9:00	- 14:00	5.00	DRLPRO	06	Α	Р	SPOTTED 70 BBLS 12.5 MUD# ON BOTTOM, PULLED
								20 STANDS, PUMPED PILL, TRIPPED OUT OF HOLE
								FOR NEW BIT AND MOTOR
	14:00	- 21:00	7.00	DRLPRO	06	Α	Р	TRIPPED IN THE HOLE, WASH AND REAM THROUGH
								4500'-4600', 5400'-5500'. REAMED 100' TO BOTTOM
	21:00	- 0:00	3.00	DRLPRO	02	В	Р	CLOSED LOOP SYSTEM
								DRILL F/10799' TO 10970',171'@57'PH
								WOB /18-20
								RPM TOP DRIVE 60, MOTOR-135
								SPM 180 GPM 527
								MW 11.0 VIS 40
								TRQ ON/OFF = 8000-6000 K
								PSI ON /OFF 2900-2700,
								DIFF 100-300
								PU/SO/RT = 250/180/210
								SLIDE =
								ROT = 100%
								STRATA - OFFLINE
								NOV- OFFLINE
								16.4' S & 2.3' W OF TARGET CENTER
								5' DRILL FLARE, 5' CONN FLARE
4/18/2012	0:00	- 8:00	8.00	DRLPRO	02	В	P	CLOSED LOOP SYSTEM
								DRILL F/10970' TO 11426',456'@57'PH
								WOB /23
								RPM TOP DRIVE 60, MOTOR-135
								SPM 180 GPM 527
								MW 111 VIS 42
								TRQ ON/OFF = 8000-6000 K
								PSI ON /OFF 2900-2700,
								DIFF 100-300
								PU/SO/RT = 250/180/210
								SLIDE =
								ROT = 100%
								STRATA - OFFLINE
								NOV- OFFLINE
								29' S & 3.6' W OF TARGET CENTER
								5' DRILL FLARE, 5' CONN FLARE
	8:00	- 10:30	2.50	DRLPRO	05	С	Р	CIRCULATE 2 BOTTOMS UP, 2 HIGH VIS SWEEPS

7/10/2012

3:26:14PM

## **Operation Summary Report**

 Well: NBU 921-20C
 Spud Date: 3/29/2012

 Project: UTAH-UINTAH
 Site: NBU 921-20C
 Rig Name No: PIONEER 54/54, CAPSTAR 310/310

 Event: DRILLING
 Start Date: 3/15/2012
 End Date: 4/20/2012

Active Datum: RKB @4,881.00usft (above Mean Sea

UWI: NE/NW/0/9/S/21/Ei20/0/0/26/PM/N/588/W/0/2261/0/0

Date	Time	Duration	Phase	Code	Sub	P/U MD	From Operation
2	Start-End	(hr)			Code		sft)
	10:30 - 17:00	6.50	DRLPRO	06	E	Р	WIPER TRIP TO THE SHOE AND BACK
	17:00 - 19:30	2.50	DRLPRO	05	С	Р	CIRCULATE 2 BOTTOMS UP, 2 HIGH VIS SWEEPS
	19:30 - 0:00	4.50	DRLPRO	06	В	Р	TRIPPING OUT OF HOLE FOR LOGS
4/19/2012	0:00 - 1:30	1.50	DRLPRO	11	D	P	SAFETY MEETING, RIG UP WIRELINE LOGS
	1:30 - 3:00	1.50	DRLPRO	11	D	Р	RAN WIRELINE LOGS, LOGS BRIDGED OUT @4626
	3:00 - 4:00	1.00	DRLPRO	11	D	Р	RIG DOWN LOGGERS
	4:00 - 5:30	1.50	DRLPRO	06	В	S	TRIPPING HOLE TO CLEAN WELL BORE FOR LOGS AND COME OUT SIDEWAYS
	5:30 - 6:00	0.50	DRLPRO	09	Α	Р	SLIP AND CUT 100' OF DRILL LINE
	6:00 - 9:00	3.00	DRLPRO	06	В	S	TRIP TO BOTTOM, REAM LAST 90'
	9:00 - 11:00	2.00	DRLPRO	05	С	P	CIRCULATE BOTTOMS UP
	11:00 - 20:30	9,50	DRLPRO	06	В	Р	SAFETY MEETING WITH KIMZEY, TRIPPIMG OUT, LAYING DOWN DRILL PIPE AND BHA
	20:30 - 0:00	3.50	DRLPRO	11	D	Р	RIG BACK UP LOGGERS, RUN WIRE LINE LOGS
4/20/2012	0:00 - 5:00	5.00	DRLPRO	11	D	Р	TRIPLE COMBO LOGS DOWN AND UP FROM 11425
	5:00 - 6:00	1.00	DRLPRO	14	В	P :	PULL WEAR BUSHING
4/20/2012	6:00 - 17:00 17:00 - 18:30	11.00 1.50	DRLPRO DRLPRO	12	A D	P T	HELD PRE-JOB SAFETY MEETING WITH RIG & CASING CREWS, RIG UP & RUN 146 JTS 4.5" LTC + 2 MARKERS, 112 JTS 4.5" DQX PROD CASING + 1 X/O, SHOE @ 11,407, FLOAT @ 11,359, B/H MARKER @ 10,814, MESA MARKER @ 8072', X/O @ 4994 CIRC OUT GAS TO CEMENT PROD CASING
	18:30 - 22:30	4.00	DRLPRO	12	E	P	HELD PRE JOB SAFETY MEETING WITH RIG &
	22.50		2.2.10		-		CEMENTERS, TEST LINES TO 5600 PSI, DROP BOTTOM PLUG, PUMP 25 BBL WATER SPACER, LEAD 573 SACK 12 PPG 2.26 YLD, TAIL 1920 SACKS 14.3 PPG 1.32 YLD W .5% EC 1, DROP PLUG & DISPLACE WITH 176 BBLS CLAYCARE WATER, FULL RETURNS THROUGHOUT JOB, BUMPED PLUG @ 4100PSI FOR 5 MIN, FLOATS HELD WITH 5 BBLS BACK TO TRUCK, EST TOP OF CEMENT 4500, PLUG BACK TO 11,406
	22:30 - 23:00	0.50	DRLPRO	14	В	Р	SET C22 SLIPS AT 120K
	23:00 - 0:00	1.00	DRLPRO	14	Α	P	ROUGH CUT & RELEASE RIG TO NBU 921-19F

7/10/2012 3:26:14PM

#### 1 General

#### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

#### 1.2 Well/Wellbore Information

Well	NBU 921-20C	Wellbore No.	ОН
Well Name	NBU 921-20C	Wellbore Name	NBU 921-20C
Report No.	1	Report Date	5/15/2012
Project	UTAH-UINTAH	Site	NBU 921-20C
Rig Name/No.		Event	COMPLETION
Start Date	5/15/2012	End Date	5/29/2012
Spud Date	3/29/2012	Active Datum	RKB @4,881.01ft (above Mean Sea Level)
UWI	NE/NW/0/9/S/21/E/20/0/0/26/PM/N/588/W/0/2261/0/0		· · ·

#### 1.3 General

Contractor	CASED HOLE	Job Method	Supervisor	STEVE WALL, SR.
Perforated Assembly	PRODUCTION CASING	Conveyed Method		

#### 1.4 Initial Conditions

## 1.5 Summary

Fluid Type		Fluid Density	Gross Interval	9,432.0 (ft)-11,198.0 (ft)	Start Date/Time	5/22/2012 12:00AM
Surface Press		Estimate Res Press	No. of Intervals	34	End Date/Time	5/25/2012 12:00AM
TVD Fluid Top		Fluid Head	Total Shots	143	Net Perforation Interval	47.00 (ft)
Hydrostatic Press		Press Difference	Avg Shot Density	3.04 (shot/ft)	Final Surface Pressure	
Balance Cond	NEUTRAL				Final Press Date	

#### 2 Intervals

#### 2.1 Perforated Interval

Date Formation/ CCL@ C Reservoir (ft)	CCL-T MD Top J S (ft)	(ft)	Shot Density (shot/ft)	Misfires/ Diamete Carr Type /Stage Add. Shot r (in)	e No Carr Size (in)	องเราะเลยเทา คายสมพัติโดยได้ทำสายสมเดาสมเด	ge Desc /Charge Charge Reason Misrun Manufacturer Weight (gram)
5/25/2012 MESAVERDE/	9,432.0	9,433.0	3.00	0.360 EXP/	3.375	120.00	23.00 PRODUCTIO
12:00AM							N

 July 19, 2012 at 12:58 pm
 1
 OpenWells

#### 2.1 Perforated Interval (Continued)

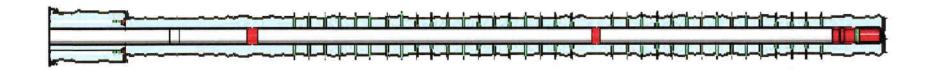
Date	Formation/	CCL@	CCL-T MD T		Shot	Misfires/ Diamete	Carr Type /Stage No	Carr	Phasing	Charge Desc/Charge	Charge	Reason	Misrun
	Reservoir	(ft)	S (ft)	(ft)	Density (shot/ft)	Add. Shot r (in)		Size (in)	(°)	Manufacturer	Weight (gram)		
5/25/2012	MESAVERDE/		9,45	0.0 9,451.0			EXP/	3.375	120.00			PRODUCTIO	<u>A</u> VV., 808, 100
12:00AM							<u> </u>					N	4
5/25/2012 12:00AM	MESAVERDE/		9,51	0.0 9,511.0	3.00	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO	
	MESAVERDE/		9,53	6.0 9,537.0	3.00	0.38	D EXP/	3.375	120.00		23.00	PRODUCTIO	
12:00AM	WESAVERDE		9,55	3,557.0	5.00	0.50	, LNI /	0.070	120.00		20.00	N	
5/25/2012	MESAVERDE/		9,57	1.0 9,573.0	3.00	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO	
12:00AM	·							: <u></u>				N	-:
	MESAVERDE/		9,59	9,598.0	3.00	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO	1
12:00AM	MESAVERDE/		9,69	4.0 9.696.0	3.00	กรล	) EXP/	3.375	120.00		23.00	PRODUCTIO	
12:00AM	INTEGAVERDE!		0,00	4.0 0,000.0		0.50	, LXIII	0.070	120.00		20.00	N	
5/25/2012	MESAVERDE/		9,72	1.0 9,722.0	3.00	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO	
12:00AM								·				N	: - ;
5/25/2012 12:00AM	MESAVERDE/		9,74	1.0 9,742.0	3.00	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/		9,75	9.0 9,760.0	3.00	0.360	EXP/	3.375	120.00	· · · · · · · · · · · · · · · · · · ·		PRODUCTIO	
12:00AM	MESAVERDE/		9,82	4.0 9,825.0	3.00	0.38	EXP/	3.375	120.00			N PRODUCTIO	1
12:00AM	WESAVERDE/		5,02	4.0 5,023.0	3.00	0.500	LAF/	3.373	120.00		23.00	N	
5/25/2012 12:00AM	MESAVERDE/		9,89	4.0 9,895.0	3.00	0.360	EXP/	3.375	120.00			PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/	:	9,92	4.0 9,925.0	3.00	0.360	EXP/	3.375	120.00	:		PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/		9,97	8.0 9,979.0	3.00	0.360	EXP/	3.375	120.00			PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/		10,00	3.0 10,010.0	3.00	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	:
5/25/2012	MESAVERDE/		10,09	5.0 10,096.0	3.00	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO	
12:00AM			1. 1. 1									N	-)
5/25/2012 12:00AM	MESAVERDE/		10,11	4.0 10,115.0	3.00	0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/		10.12	8.0 10,129.0	3.00	0.360	EXP/	3.375	120.00			PRODUCTIO	
12:00AM	mes, were a				0.00	1						N	
5/25/2012 12:00AM	MESAVERDE/		10,19	3.0 10,200.0	3.00	0.360	EXP/	3.375	120.00			PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/		10,88	3.0 10,884.0	3.00	0.360	EXP/	3.375	120.00			PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/		10,90	4.0 10,906.0	3.00	0.360	EXP/	3.375	120.00			PRODUCTIO N	
	MESAVERDE/		10,92	3.0 10,929.0	3.00	0.360	EXP/	3.375	120.00			PRODUCTIO N	

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (ft)	CCL-T S (ft)	MD Top (ft)	MD Base (ft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Stage No	Carr Size (in)	Phasing (°)	Charge Desc/Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
5/25/2012 12:00AM	MESAVERDE/			10,954.0	10,955.0	3,00		0.360	EXP/	3.375	120.00		23.00	23.00 PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/			10,964.0	10,966.0	3.00		0.360	EXP/	3.375	120.00		23.00 PRODUCTIO N		
5/25/2012 12:00AM	MESAVERDE/			10,979,0	10,980.0	3.00		0.360	EXP/	3.375	120,00		23.00	23.00 PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/			10,989.0	10,990.0	3.00		0.360	EXP/	3.375	120.00		23.00	23.00 PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/			11,045.0	11,046.0	3.00		0,360	EXP/	3.375	120.00			23.00 PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/			11,055.0	11,057.0	3.00		0.360	EXP/	3,375	120.00		23.00	23.00 PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/			11,067.0	11,068.0	3.00		0.360	EXP/	3,375	120.00		23.00	PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/			11,077.0	11,079.0	3.00		0,360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
5/25/2012 12:00AM	MESAVERDE/			11,106.0	11,107.0	3.00		0,360	EXP/	3.375	120,00		23.00	PRODUCTIO N	
5/22/2012 12:00AM	MESAVERDE/			11,159,0	11,161,0	4.00		0,360	EXP/	3.375	90.00		23.00 PRODUCTIO N		
5/22/2012 12:00AM	MESAVERDE/			11,185.0	11,186.0	3.00		0.360	EXP/	3.375	120,00		23.00 PRODUCTIO N		
5/22/2012 12:00AM	MESAVERDE/			11,194.0	11,198.0	3.00		0.360	EXP/	3.375	120,00		23.00	PRODUCTIO N	

#### 3 Plots

#### 3.1 Wellbore Schematic



## **Operation Summary Report**

Well: NBU 921-20C Spud Date: 3/29/2012 Project: UTAH-UINTAH Site: NBU 921-20C Rig Name No: SWABBCO 8/8 Event: COMPLETION End Date: 5/29/2012 Start Date: 5/15/2012

Active Datum: RKB @4,881.00usft (above Mean Sea Level)						UWI: NE/NW/0/9/S/21/El/20/0/0/26/PM/N/588/W/0/2261/0/0			
3/29/2012		-							
5/16/2012	9:00	- 9:15	0.25	SURFPR	48		Р	HSM & JSA W/B & C QUICK TEST.	
	9:15	- 10:45	1.50	SURFPR			P	WHP 0 PSI. FILL SURFACE CSG. MIRU B&C QUICK TEST. TIGHTEN DOW WELL HEAD BOLTS. PSI TEST T/ 1075 PSI. HELD FOR 15 MIN LOST 44 PSI. PSI TEST T/ 3506 PSI. HELD FOR 15 MIN LOST 38 PSI. 1ST PSI TEST T/ 9143 PSI. HELD FOR 30 MIN LOST 81 PSI. NO COMMUNICATION OR MIGRATION WITH SURFACE CSG	
5/18/2012	7:00	- 7:30	0.50	COMP	48		Р	BLEED OFF PSI. MOVE T/ NEXT WELL. SWIFN HSM, PPE	
	7:30	- 15:00	7.50	COMP	31	ł	P	RIG UP RIG, ND WH NU BOPS, PU 37/8 BIT & 250 JTS 23/8 L-80 EOT @ 7923' SWI SDFWE	
5/21/2012	7:00	- 7:30	0.50	COMP	48		Р	HSM, TRIPPING TBG WATCHING PINCH POINTS.	
	7:30	- 15:00	7.50	COMP	31	I	Р	SICP 0, POOH W/ 250 JTS 23/8 L-80 L/D BIT, ND BOPS NU FV INSTALLED TBG HANGER, TEST FV TO 9000 PSI FOR 10 MIN LOST 44 PSI GOOD TEST, RD B&C. SWI SDFN.	
5/22/2012		-						·	
	7:00	- 7:30	0.50	COMP	48		Р	HSM, WORKING W/ WIRE LINE	
	7:30	- 15:00	7.50	COMP	37	В	Р	RU CASED HOLE, RIH W/ 31/8 23 GRM .36" 120 & 9 DEG PHASING EXP GUNS & PERF 1ST STG AS OF PROCEDURE POOH SWI PREP TO FRAC IN AM. SDFN	
5/23/2012	6:30	- 7:00	0.50	COMP	48		Р	HSM W/ SUPERIOR STAY AWAY F/ HIGH PRESSURE LINES & KEEP EYE ON SURF FOR COMMUNICATION.PRIME PUMPS & LINES TEST LINES TO 9525 PSI LOST 650 PSI IN 15 MIN, SET POPOFF @ 8850 PSI, SET KICK OUT ON TRKS TO 8800 PSI, 8775 PSI, 8750 PSI, 8725 PSI, 8700 PSI, 8675 PSI.	
	7:00	- 8:01	1.02	COMP	36	E	P ·	( STG #1 ) WHP 640 PSI, BRK 4838 PSI @ 4.7 BPM. ISIP 3797 PSI, FG .78. SPOT ACID ON PERFS LET SOAK FOR 5 MINS.  CALC HOLES OPEN @ 50.0 BPM @ 6431 PSI ≈ 100% HOLES OPEN.  MP 7461 PSI, MR 50.2 BPM, AP 6464 PSI, AR 50.1 BPM ISIP 3860 PSI, FG .78 NPI 63 PSI.	
	8:01	- 11:00	2.98	СОМР	36	Е	Р	( STG #2 ) PU 41/2 HAL 10-K CBP & 31/8 EXP 23 GRM .36" HLS, 90 DEG PHASING, SET CBP @ 11,154',PLUG SET BUT DIDN'T SHEAR. WORK TRYING TO GET FREE NO LUCK HAD TO PULL OUT OF ROPE SOCKET.BLEAD OFF PSI, POOH RD LUBRICATOR. RD FRAC TREE.ND FV NU 10K BOPS.RU FLOOR.	

7/11/2012 7:52:15AM

#### US ROCKIES REGION

#### **Operation Summary Report**

Well: NBU 921-20C Spud Date: 3/29/2012 Project: UTAH-UINTAH Site: NBU 921-20C Rig Name No: SWABBCO 8/8 Event: COMPLETION End Date: 5/29/2012 Start Date: 5/15/2012

Active Datum: RKB @4.881,00usft (above Mean Sea UWI: NE/NW/0/9/S/21/E/20/0/0/26/PM/N/588/W/0/2261/0/0

Level)	ND (@4,00	1.00usit (at	Dove Mean Se	;a	OVVI. IVE	21444/0/3/	0/21/0/20/0	0/0/20/F WWW 056/VW 0/226 1/0/0
Date		ime irt-End	Duration (hr)	Phase	Code	Sub Code	P/U (	MD From Operation (usft)
	11:00	- 14:00	3.00	COMP	31	В	Р	PU RIH W/ OVERSHOT, DRAIN SUB, BUMPER SUB,
								JARS, X/O, 23/8 PUP JT & 70 JTS 23/8 L-80 OUT OF
								DERICK WELL STARTED FLOWING GOT WELL SHUT
								IN HAD TO CHAIN DWN TBG, PSI BUILT TO 3500 PSI,
								LET WELL FLOW TO PIT @ 350 PSI, OREDERED
								BRINE WATER & TBG STRING FLOAT, PSI DROPPED
								TO 100 PSI FLOWING.BRINE WATER ARIVED.
	14:00	- 17:00	3.00	COMP			Р	PUMPED 20 BBLS BRINE, PSI CAME UP TO 3400 PSI,
								SHUT DWN OPEN WELL TO PIT WAIT ON FLOW
Į.								DAGE OPEN TURN AFTE OVER TO TRADENAL ET

	St	art-End	(hr)			Code	17	(usft)
	11:00	- 14:00	3.00	COMP	31	В	Р	PU RIH W/ OVERSHOT, DRAIN SUB, BUMPER SUB, JARS, X/O, 23/8 PUP JT & 70 JTS 23/8 L-80 OUT OF DERICK WELL STARTED FLOWING GOT WELL SHUT IN HAD TO CHAIN DWN TBG, PSI BUILT TO 3500 PSI,
	14:00	- 17:00	3.00	СОМР			Р	LET WELL FLOW TO PIT @ 350 PSI, OREDERED BRINE WATER & TBG STRING FLOAT, PSI DROPPED TO 100 PSI FLOWING.BRINE WATER ARIVED. PUMPED 20 BBLS BRINE, PSI CAME UP TO 3400 PSI, SHUT DWN OPEN WELL TO PIT WAIT ON FLOW
5/24/2012	7:00	- 7:30	0.50	COMP	48		Р	BACK CREW.TURN WELL OVER TO FB CREW. LET WELL FLOW TO PIT. HSM, CONTROLING WELL W/ BRINE, WORKING W/
	7:30	- 9:00	1.50	COMP	31	В	Р	FISHING TOOLS. CSG FLOWING @ 0 PSI, PUMP 60 BBLS BRINE DWN
	9:00	- 21:30	12.50	COMP	34			CSG & LET TRICKLE, L/D BENT JT POOH W/ 69 JTS & FISHING BHA. HAD FISH IN OVERSHOT CENTER OF PLUG WAS STILL IN SETTING TOOL, L/D SAME. BROKE APART FISHING TOOLS & LOAD SAME. ND DRILLING HEAD & SPOOL, RU WL ONTOP OF HYDRIL, RIH W/ 41/2 GAUGE RING TO 11,154' TAG
								CBP, POOH RIH W/ 41/2 8K CBP & SET @ 11,148', POOH, RD CASED HOLE.BLEAD OFF 2300 # PSI, ND BOPS NU FV, RU FLOOR. RU SCHLUMBERGER WIRE LINE.HAD TROUBLE GETTING TOOL WORKING, CUT LINE & REHEAD ROPE SOCKET. RU CSG CALIPER LOG F/ 2500' UP TO 2,000'SEVERAL TIMES NOT GETTING GOOD READINGS, POOH RD WL. CALLED FOR ORDERS DICIDED TO GO AHEAD & FRAC IN AM.SWI SDFN.
5/25/2012	7:00	- 9:37	2.62	COMP	48		P	HSM WORKING W/ WIRE LINE & FRAC CREW. RU CASED HOLE, RIH W/ 31/8 23 GRM .36" 120 DEG PHASING GNS & PERF AS OF PROCEDURE. (STG #2) WHP 30 PSI, BRK 4020 PSI @ 4.7 BPM. ISIP 3198 PSI, FG .73. CALC HOLES OPEN @ 50.0 BPM @ 6454 PSI = 100% HOLES OPEN. MP 7282 PSI, MR 50.3 BPM, AP 6522 PSI, AR 50.1 BPM ISIP 3819 PSI, FG .78 NPI 621 PSI.
	9:37	- 13:27	3.83	COMP	36	E	P	(STG # 3) PU 41/2 HAL 8-K CBP & 31/8 EXP 23 GRM .36" HLS, 120 DEG PHASING, SET CBP @ 11,044', PERF WELL AS OF PROCEDURE. WHP 2420 PSI, BRK 4232 PSI @ 4.6 BPM. ISIP 3697 PSI, FG .78. CALC HOLES OPEN @ 53.1 BPM @ 6207 PSI = 100% HOLES OPEN.AFTER 69,254 SAND & 4905 BBLS WTR, LOST UNION ON CHICKSAN.SHUT DWN,GOT FIXED. START BACK UP PUMP 160 BBLS WTR WENT BACK TO SAND. MP 7212 PSI, MR 53.0 BPM, AP 6508 PSI, AR 51.1 BPM ISIP 3869 PSI, FG .79 NPI 172 PSI.

ISIP 3869 PSI, FG .79 NPI 172 PSI.

#### US ROCKIES REGION

#### **Operation Summary Report**

 Well: NBU 921-20C
 Spud Date: 3/29/2012

 Project: UTAH-UINTAH
 Site: NBU 921-20C
 Rig Name No: SWABBCO 8/8

 Event: COMPLETION
 Start Date: 5/15/2012
 End Date: 5/29/2012

Active Datum: R	KB @4,88	31.00usft (a	oove Mean Se	ea	UWI: NE	E/ <b>NW</b> /0/9	/S/21/E/20/0/0/	26/PM/N/588/W/0/2261/0/0
Level) Date	1	Tima	Duration	Phase	Code	6.6	P/U N	MD From Operation
Paic		rime art-End	Duration (hr)	i ilase	Ouge	Sub Code	77 <b>0</b> N	VID From Operation (usft)
	13:27	- 15:05	1.63	COMP	36	E	Р	( STG #4 ) PU 41/2 HAL 8-K CBP & 31/8 EXP 23 GRM .36" HLS, 120 DEG PHASING, SET CBP @ 10,260', PERF WELL AS OF PROCEDURE. WHP 1680 PSI, BRK 3047 PSI @ 4.6 BPM. ISIP 2452 PSI, FG .68. CALC HOLES OPEN @ 52.7 BPM @ 5315 PSI = 100% HOLES OPEN. MP 6040 PSI, MR 52.8 BPM, AP 5569 PSI, AR 52.6 BPM
	15:05	- 16:29	1.40	COMP	36	E	P	ISIP 2896 PSI, FG .73 NPI 444 PSI. ( STG # 5 ) PU 41/2 HAL 8-K CBP & 31/8 EXP 23 GRM .36" HLS, 120 DEG PHASING, SET CBP @ 9978', PERF WELL AS OF PROCEDURE. WHP 1475 PSI, BRK 3890 PSI @ 4.7 BPM. ISIP 2759 PSI, FG .72. CALC HOLES OPEN @ 52.2 BPM @ 5384 PSI =
								100% HOLES OPEN. MP 6218 PSI, MR 52.8 BPM, AP 5845 PSI, AR 52.6 BPM ISIP 3215 PSI, FG .77 NPI 456 PSI.
	16:29	- 18:06	1.62	COMP	36	E	P	(STG #6) PU 41/2 HAL 8-K CBP & 31/8 EXP 23 GRM .36" HLS, 120 DEG PHASING, SET CBP @ 9654', PERF WELL AS OF PROCEDURE. WHP 1575 PSI, BRK 3571 PSI @ 4.5 BPM. ISIP 2484 PSI, FG .70. CALC HOLES OPEN @ 50.5 BPM @ 4767 PSI = 100% HOLES OPEN. MP 5715 PSI, MR 50.8 BPM, AP 5091 PSI, AR 50.5 BPM ISIP 2858 PSI, FG .74 NPI 374 PSI.
								190,285 LBS 30/50 TLC 48,029 LBS 30/50 WHITE 14,270 BBLS WTR SCALE INH 309 GALS BIOCIDE 181 GALS 2593 GALS DIESEL FRAC CREW.
	18:06	- 20:00	1.90	COMP	36	E	Р	( KILL PLUG ) RIH SET 41/2 8K CBP @ 9396', POOH SWI RD WL & FRAC CREW. SDFWE
5/29/2012	7:00	- 7:30	0.50	COMP	48		Р	HSM, WORKING W/ POWER SWIVEL & WORKING W/ PRESSURE.
	7:30	- 11:30	4.00	COMP	31	ı	Р	SICP 0, ND FV, NU 10-K BOPS, RU FLOOR. RIH W/ 37/8 BIT, POBS, 1.875 X/N & 70 JTS 23/8 L-80 OUT OF DERICK, PU JTS 23/8 L-80 OFF FLOAT TAG UP @ 'RU DRLG EQUIP, BROKE CIRC CONV, TEST BOPS TO 4,000 PSI OK.

7/11/2012 7:52:15AM

		US ROCK	(IES REGION		
		Operation S	uminary Report		
Well: NBU 921-20C	·····		Spud Date: 3/2	9/2012	
Project: UTAH-UINTAH	Site: NB	U 921-20C		Rig Name No: SWABBCO	9 8/8
Event: COMPLETION	Start Dat	te: 5/15/2012		End Date: 5/29/2012	
Active Datum: RKB @4,881,00usft (above	Mean Sea	UWI: NE/NW/0/9/	S/21/E/20/0/0/26/PM/N/58	8/ <b>W/</b> 0/2261/0/0	
	uration Phase	Code Sub	P/U MD From	Ор	eration
	(hr)   5.50 COMP	Code	(usft)	0/0 51 04 1/0 74 0 40 7 0 1 1	IO O 00001 DD D1 D1 O 1110
11.00 - 17.00	3.30 COMP			C/O 5' SAND TAG 1ST PLU MIN, 850# PSI INCREASE	-
				C/O 25' SAND TAG 2ND PL 5 MIN, 700# PSI INCREAS	-
				C/O 35' SAND TAG 3RD PL 5 MIN, 1350# PSI INCREAS	=
				C/O 25' SAND TAG 4TH PL 5 MIN, 1250# PSI INCREAS	-
				C/O 25' SAND TAG 5TH PL 7 MIN, 1200# PSI INCREAS	•
ı				C/O 40' SAND TAG 6TH PL 4 MIN, 800# PSI INCREASE	-
				C/O 0' SAND TAG 7TH PLU 2 MIN, 0# PSI INCREASE F	_
				C/O TO 11,309', CIRC CLN, ON 346 JTS 23/8 L-80. ND I FLOW LINE TO 4,000 PSI, I WELL OVER TO FB CREW	BOPS NU WH, TEST PUMP OFF BIT, TURN
				KB= 19' POPOFF )	( SURFOPEN W/
				HANGER = .83' PSI, FTP 1100 PSI 346 JTS 23/8 L-80 = 10,977 POBS W/ 1.875 X/N = 2.20'	SICP 3250
				EOT @ 10,999.87	
				TWTR 14,420 BBLS TWR 2300 BBLS TWLTR 12,120 BBLS	
				366 JTS IN WELL 346 LANDED 20 TO RETURN	
16:30 - 9:11	COMP	50		WELL TURNED TO SALES 5/29/2012, 1800 MCFD, 192 2900#, 20/64" CK.	•
5/30/2012 - 6/4/2012 7:00 -		50		WELL IP'D ON 6/4/12 - 3180 BWPD, CP 3887#, FTP 311 HRS	

7/11/2012 7:52:15AM



Project: UTAH - UTM (feet), NAD27, Zone 12N

Site: NBU 921-20C Well: NBU 921-20C

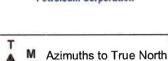
Wellbore: OH Design: OH



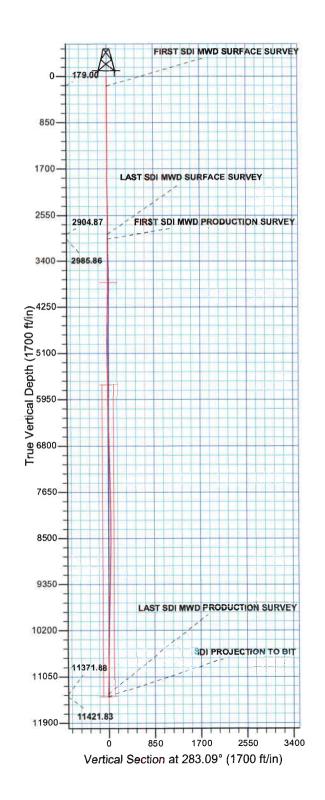
WELL DETAILS: NBU 921-20C

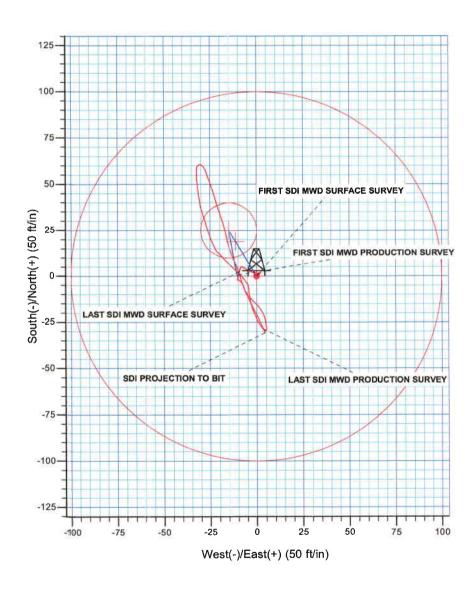
GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 14539155.62 2038993.23 40.027259 -409.576268









PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsold: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SECTION 20 T9S R21E
System Datum: Wean Sea Level

Design: OH (NBU 921-20C/OH)

Created By: Gabe Kendali Date: 9:16, April 23 2012



### **US ROCKIES REGION PLANNING**

UTAH - UTM (feet), NAD27, Zone 12N NBU 921-20C NBU 921-20C

OH

Design: OH

# **Standard Survey Report**

23 April, 2012





### Survey Report



Company:

US ROCKIES REGION PLANNING

**Project**:

UTAH - UTM (feet), NAD27, Zone 12N

Site: Well: NBU 921-20C

Wellbore:

NBU 921-20C

ОН ОН Design:

Local Co-prdinate Reference:

Site NBU 921-20C

TVD Reference: MD Reference:

North Reference:

System Datum:

Database:

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

True Minimum Curvature

Survey Calculation Method:

EDM 5000.1 Single User Db

Project

UTAH - UTM (feet), NAD27, Zone 12N

Map System: Geo Datum:

Map Zone:

Universal Transverse Mercator (US Survey Feet)

NAD 1927 (NADCON CONUS)

Zone 12N (114 W to 108 W)

Mean Sea Level

Site

NBU 921-20C, SECTION 20 T9S R21E

Site Position: From: Lat/Long Northing:

14,539,155.63 usft

Latitude:

40.027259

Easting: Slot Radius: 2,038,993.22 usft

Longitude:

-109.576268

Position Uncertainty:

0.00 ft

13.200 in

Grid Convergence:

0.92 °

Well

NBU 921-20C, 588' FNL 2261' FWL

Well Position +N/-S +E/-W 0.00 ft 0.00 ft

Northina: Easting:

14,539,155.63 usft

11.01

Latitude:

40.027259

**Position Uncertainty** 

0.00 ft

Wellhead Elevation:

03/23/12

0.00

2,038,993.22 usft

Longitude: **Ground Level:** 

-109.576268 4,862.00 ft

Wellbore

ОН

Magnetics

Model Name Sample Date

IGRF2010

Declination (\*)

Dip Angle (°)

Field Strength

(nT)

65.86 52,257

Design

**Audit Notes:** 

Version:

1.0

ОН

Phase:

ACTUAL

Tie On Depth:

0.00

Vertical Section:

Depth From (TVD)

+N/-S (ft)

0.00

+E/-W (ft) 0.00

Direction (°)

283.09

Survey Program

04/23/12

To From (ft) (ft)

Survey (Wellbore)

**Tool Name** 

Description

10.00 2,986.00 2,905.00 Survey #1 SDI MWD SURFACE (OH)

SDI MWD SDI MWD SDI MWD - Standard ver 1.0.1 SDI MWD - Standard ver 1.0.1

0.33

0.09

Survey

11,426.00 Survey #2 SDI MWD PRODUCTION (OH)

Measured Depth (ft)	inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
179.00	0.18	44.59	179.00	0.19	0.19	-0.14	0.11	0.11	0.00
FIRST SDI M	IWD SURFACE S	URVEY							
271.00	0.26	62.43	271.00	0.39	0.47	-0.37	0.11	0.09	19.39
361.00	0.18	21.47	361.00	0.61	0.71	-0.55	0.19	-0.09	-45.51
454.00	0.26	16.99	454.00	0.95	0.82	-0.58	0.09	0.09	-4.82
548.00	0.18	355.98	548.00	1.30	0.87	-0.55	0.12	-0.09	-22.35
641,00	0.26	46.43	641.00	1,59	1.02	-0.63	0.22	0.09	54,25

736.00

0.35

106.11

736.00

1.45

-1.04

1.66



#### **SDI** Survey Report



Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N

Site: NBU 921-20C

Well: NBU 921-20C

Wellbore: OH Design: OH Local Co-prdinate Reference:

TVD Reference: MD Reference:

North Reference: Survey Calculation Method:

Database:

Site NBU 921-20C

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54) GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

True

Minimum Curvature

Measured			Vertical	19 The L. N	Miller (1986)	Vertical	Dogleg	Build	Turn
Depth (ft)	Inclination (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Section (ft)	Rate (°/100ft)	Rate (°/100ft)	Rate (*/100ft)
830.00	0.35	94.86	829.99	1.56	2.01	-1.61	0.07	0.00	-11.97
924.00	0.09	347.02	923.99	1.61	2.28	-1.86	0.41	-0.28	-114.72
1,017.00	0.18	0.73	1,016.99	1.82	2.27	-1.80	0.10	0.10	14.74
1,110.00	0.09	342.45	1,109.99	2.04	2.25	-1.73	0.11	-0.10	-19.66
1,203.00	0.18	245.77	1,202.99	2.05	2.09	-1.57	0.23	0.10	-103.96
1,296.00	0.07	319.14	1,295.99	2.03	1.92	-1.41	0.19	-0.12	78.89
1,392.00	0.26	158.05	1,391.99	1.87	1.96	-1.49	0.34	0.20	-167.80
1,487.00	0.09	161.39	1,486.99	1.60	2.07	-1.65	0.18	-0.18	3.52
1,581.00	0.09	276.62	1,580,99	1.54	2.02	-1.62	0.16	0.00	122.59
1,677.00	0.09	253,33	1,676.99	1,53	1.87	-1.48	0.04	0.00	-24.26
1,772.00	0.35	214.74	1,771.99	1.27	1.64	-1.30	0.30	0.27	-40.62
1,867.00	0,55	270.55	1,866.99	1.04	1.01	-0.75	0.48	0.21	58.75
1,961.00	0.89	282.38	1,960.98	1.20	-0.15	0.42	0.39	0.36	12.59
2,055.00	1.14	297.62	2,054.97	1.79	-1.69	2.05	0.39	0.27	16.21
2,149.00	1.41	295.69	2,148.94	2.72	-3.56	4.09	0.29	0.29	-2.05
2,244.00	1.41	299.82	2,243.91	3.81	-5.63	6.35	0.11	0.00	4.35
2,339.00	0.62	296.30	2,338.90	4.62	-7,10	7.97	0.83	-0.83	-3.71
2,435.00	0.44	310.72	2,434.89	5.09	-7.85	8.80	0.23	-0.19	15.02
2,529.00	0.09	214.83	2,528.89	5.26	-8.17	9.15	0.49	-0.37	-102.01
2,623.00	0.18	218.34	2,622.89	5.09	-8.30	9.24	0.10	0.10	3.73
2,719.00	0.53	199.27	2,718.89	4.55	-8.54	9.35	0.38	0.36	-19.86
2,811.00	0.79	197.43	2,810.88	3.54	-8.87	9.44	0.28	0.28	-2.00
2,905.00	0.97	194.00	2,904.87	2.15	-9.26	9.50	0.20	0.19	-3.65
LAST SDIM	WD SURFACE S	URVEY							
2,986.00	1.23 IWD PRODUCTION	193.91	2,985.86	0.64	-9.63	9.53	0.32	0.32	-0.11
3,081.00	1.15	194.91	3,080.84	-1.27	-10.12	9.57	0.09	-0.08	1.05
3,081.00	0.21	350.42	3,175.83	-2.02	-10.12	9.67	1.41	-0.08	163.69
3,271.00	0.26	119.12	3,270.83	-1.95	-10.24	9.53	0.45	0.05	135.47
3,365.00	0.24	94.29	3,364,83	-2.07	-9.85	9.13	0.43	-0.02	-26,41
3,460.00	0.31	116.37	3,459.83	-2.20	-9.43	8.68	0.12	0.07	23.24
3,555.00	0.62	136.52	3,554.83	-2.68	-8.84	8.00	0.16	0.33	21.21
3,650.00	0.02	143.72	3,649.82	-3.71	-8.01	6.96	0.38	0.37	7.58
			0.744.00						45.67
3,745.00	1.32	158.23	3,744.80	-5.37	-7.13	5.73	0.48	0.37	15.27
3,840.00	1.23	165.70	3,839.78	-7.37 8.54	-6.47 5.04	4.63	0.20	-0.09	7.86
3,934.00	0.41	122.93	3,933.77	-8.54 0.46	-5.94 -5.94	3.85	1.03	-0.87	-45.50
4,029.00	0.62	147.94	4,028.76	-9.16	-5.38	3.17	0.32	0.22	26.33
4,124.00	0.88	152.25	4,123.75	-10.24	-4.77	2.33	0.28	0.27	4.54
4,219.00	1.32	131.68	4,218.74	-11.61	-3.61	0.89	0.62	0.46	-21.65
4,314.00	1.14	134.32	4,313.71	-13.00	-2.12	-0.88	0.20	-0.19	2.78
4,409.00	1.32	141.44	4,408.69	-14.51	-0.76	-2.55	0.25	0.19	7.49
4,503.00	1.41	135.73	4,502.67	-16.19	0.72	-4.37	0.17	0.10	-6.07



#### SDI Survey Report



Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site: Well: NBU 921-20C

Wellbore:

NBU 921-20C

Design:

ОН ОН

Local Co-pidinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Site NBU 921-20C

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

True

Minimum Curvature

		(1740) SANGERS							
Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (ft)	Inclination (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Section (ft)	Rate (°/100ft)	Rate (°/100ft)	Rate (°/100ft)
4,693.00	1.49	155.59	4,692.60	-20.19	3.44	-7.93	0.27	0.00	10.56
4,788.00	1.54	162.71	4,787.57	-22.53	4.33	-9.32	0.20	0.05	7.49
4,883.00	0.79	183.28	4,882.55	-24.40	4.67	-10.08	0.89	-0.79	21.65
4,978.00	0.79	162,01	4,977.54	-25.68	4.84	-10.53	0.31	0.00	-22.39
5,073.00	1.06	174.84	5,072.53	-27.18	5.12	-11.14	0.36	0.28	13.51
5,168.00	0.97	174.05	5,167.51	-28.85	5.28	-11.68	0.10	-0.09	-0.83
5,263.00	0.70	266.42	5,262.51	-29.69	4.79	-11.39	1.28	-0.28	97.23
5,358.00	0.88	323.46	5,357.50	-29.14	3.77	-10.28	0.81	0.19	60.04
5,452.00	1.67	320.12	5,451.48	-27.51	2.47	-8.63	0.84	0.84	-3.55
5,547.00	2.64	334.27	5,546.41	-24.47	0.63	-6.16	1.16	1.02	14.89
5,642.00	2.29	336.47	5,641.32	-20.76	-1.08	-3.65	0.38	-0.37	2.32
5,737.00	1.93	338.05	5,736.26	-17.54	-2.43	-1.60	0.38	-0.38	1.66
5,832.00	2.73	349.65	5,831.18	-13.83	-3.44	0.22	0.97	0.84	12.21
5,927.00	2.20	353.43	5,926.09	-9.79	-4,05	1.73	0,58	-0.56	3.98
6,022.00	1.23	8.55	6,021.05	-6.97	<del>-4</del> .11	2.42	1.12	-1.02	15.92
6,116.00	1.85	330.91	6,115.01	-4.65	-4.70	3.52	1.23	0.66	-40.04
6,211.00	1.87	323.88	6,209.96	-2.06	-6.36	5.73	0.24	0.02	-7.40
6,306.00	2.37	315.64	6,304.90	0.60	-8.65	8.56	0.62	0.53	-8.67
6,401.00	2.04	317.37	6,399.83	3.25	-11.16	11.61	0.35	-0.35	1.82
6,496.00	1.58	302.28	6,494.78	5.19	-13.42	14.24	0.69	-0.48	-15.88
6,591.00	2.55	320.03	6,589.72	7.51	-15.88	17.17	1.21	1.02	18.68
6,685.00	2.11	318.01	6,683.64	10.40	-18.38	20.26	0.48	-0.47	-2.15
6,780.00	1.58	309.59	6,778.59	12.53	-20.56	22.87	0.63	-0.56	-8.86
6,875.00	2.37	335.15	6,873.54	15,15	-22.40	25.25	1.23	0.83	26.91
6,970.00	1.85	335.24	6,968.47	18.33	-23.86	27.39	0.55	-0.55	0.09
7,065.00	3.43	341.13	7,063.37	22.41	-25.43	29.84	1.69	1.66	6.20
7,160.00	2.90	342.80	7,158.22	27.39	-27.06	32.56	0.57	-0.56	1.76
7,255.00	2.20	345.35	7,253.13	31.45	-28,23	34.62	0.75	-0.74	2.68
7,350.00	1.67	338.49	7,348.07	34.50	-29.20	36.25	0.61	-0.56	-7.22
7,445.00	2.67	347.48	7,443.00	37.95	-30.18	38.00	1.11	1.05	9.46
7,540.00	2.37	353.17	7,537.91	42.06	-30.90	39.62	0.41	-0.32	5.99
7,634.00	1.93	353.70	7,631.85	45.57	-31.30	40.81	0.47	-0.47	0.56
7,729.00	1.23	347.63	7,726.81	48.15	-31.70	41.78	0.76	-0.74	-6.39
7,823.00	1.58	358.35	7,820.78	50.43	-31.95	42.54	0.46	0.37	11.40
7,918.00	1.23	350.90	7,915.75	52.75	-32.15	43.26	0.41	-0.37	-7.84
8,013.00	1.14	7.32	8,010.73	54.69	-32.19	43.74	0.37	-0.09	17.28
8,108.00	0.79	1.43	8,105.72	56.28	-32.05	43.97	0.38	-0.37	-6.20
8,203.00	0.70	357.91	8,200.71	57.52	-32.06	44.25	0.11	-0.09	-3.71
8,298.00	0.53	10.04	8,295.71	58.53	-32.00	44.43	0.22	-0.18	12.77
8,393.00	0.44	352.47	8,390.70	59.33	-31.97	44.58	0.18	-0.09	-18.49
8,488.00	0.35	35.18	8,485.70	59.92	-31.85	44.60	0.32	-0.09	44.96
8,583.00	0.43	57.83	8,580.70	60.35	-31,38	44.24	0.18	0.08	23.84
8,678.00	0.70	76,51	8,675.69	60.68	-30.52	43.47	0.34	0.28	19.66
8,772.00	0.97	123.97	8,769.68	60.37	-29.30	42.21	0.76	0.29	50.49



# SDI Survey Report



Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site: Well: NBU 921-20C

Wellbore:

NBU 921-20C

Design:

OH OH Local Co-pidinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Site NBU 921-20C

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

True

Minimum Curvature

Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(ft)	(°)	Azimuui (°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
8,867.00	0.97	154.62	8,864.67	59.19	-28.29	40.96	0.54	0.00	32.26
8,962.00	1.76	157.88	8,959.64	57.11	-27.39	39.62	0.84	0.83	3.43
9,057.00	1.93	158.67	9,054.59	54.27	-26.26	37.87	0.18	0.18	0.83
9,151.00	2.20	161.30	9,148.53	51.09	-25.11	36.03	0.30	0.29	2.80
9,246.00	2.55	162.62	9,243.45	47.34	-23.89	34.00	0.37	0.37	1.39
9,341.00	2.37	162.45	9,338.36	43.45	-22.67	31.92	0.19	-0.19	-0.18
9,436.00	2.11	165.17	9,433.29	39.89	-21.63	30.10	0.30	-0.27	2.86
9,530.00	2.29	159.28	9,527.22	36.46	-20.52	28.25	0.31	0.19	-6.27
9,625.00	2.46	163.85	9,622.14	32.73	-19.28	26.20	0.27	0.18	4.81
9,720.00	2.64	160.34	9,717.05	28.71	-17.98	24.02	0.25	0.19	-3.69
9,815.00	2.71	169.18	9,811.94	24.44	-16.82	21.92	0.44	0.07	9.31
9,910.00	2.46	167.63	9,906.85	20.25	-15.96	20.14	0.27	-0.26	-1.63
10,005.00	2.29	166.40	10,001.76	16.41	-15.08	18.41	0.19	-0.18	-1.29
10,099.00	1,96	159.99	10,095.70	13.07	-14.09	16.68	0.43	-0.35	-6.82
10,194.00	2.11	154.71	10,190.64	9.97	-12.79	14.71	0.25	0.16	-5.56
10,289.00	2.13	155.13	10,285.58	6.78	-11.30	12.54	0.03	0.02	0.44
10,384.00	1.67	161.83	10,380.52	3.87	-10.12	10.74	0.54	-0.48	7.05
10,479.00	1.93	162.80	10,475.48	1.02	-9.22	9.21	0.28	0.27	1.02
10,574.00	2.02	164.99	10,570.42	-2.12	-8.31	7.61	0.12	0.09	2.31
10,668.00	1.84	160.28	10,664.37	-5.14	-7.37	6.02	0.26	-0.19	-5.01
10,762.00	1,58	153.83	10,758.32	-7.73	-6.29	4.38	0.34	-0.28	-6.86
10,857.00	1.76	156.38	10,853.28	-10.24	-5.13	2.68	0.20	0.19	2.68
10,952.00	2.11	155.77	10,948.23	-13.17	-3.83	0.74	0.37	0.37	-0.64
11,047.00	2.20	152.95	11,043.16	-16.39	-2,28	-1.49	0.15	0.09	-2.97
11,142.00	2.46	154.36	11,138.08	-19.85	-0.57	-3.94	0.28	0.27	1.48
11,237.00	2.29	153,48	11,233.00	-23.39	1.16	-6.43	0.18	-0.18	-0.93
11,333.00	2.46	156.64	11,328.92	-27.00	2.83	-8.88	0.22	0.18	3.29
11,376.00	2,55	155.33	11,371.88	-28.71	3.60	-10.01	0.25	0.21	-3.05
LAST SDI M	WD PRODUCTION	ON SURVEY							

Design Annotations			ereituese voorse oome	engen strummeren en e
Measured	Vertical	Local Coordi	nates	
Depth	Depth	+N/-S	+E/-W	
(ft)	<b>(ft</b> )	( <b>m</b> )	(ft)	Comment
179.00	179.00	0.19	0.119	FIRST SDI MWD SURFACE SURVEY
2,905.00	2,904.87	2.15	-9. <b>26</b>	LAST SDI MWD SURFACE SURVEY
2,986.00	2,985.86	0.64	-9: <b>B3</b>	FIRST SDI MWD PRODUCTION SURVEY
11,376.00	11,371.88	-28.71	3.600	LAST SDI MWD PRODUCTION SURVEY
11,426.00	11,421.83	-30.73	4.53	SDI PROJECTION TO BIT



## SDI

#### Survey Report



Company: US ROCKIES REGION PLANNING
Project: UTAH - UTM (feet), NAD27, Zone 12N

 Site:
 NBU 921-20C

 Well:
 NBU 921-20C

Wellbore: OH Design: OH Local Co-prelinate Reference: Site NBU 921-20C

 TVD Reference:
 GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

 MD Reference:
 GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

North Reference: True

Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

		<del>*************************************</del>	
Checked By:	Approved By:	Date:	
Oliconcu by.	Approved by.	Date.	
_			



### **US ROCKIES REGION PLANNING**

UTAH - UTM (feet), NAD27, Zone 12N NBU 921-20C NBU 921-20C

OH

Design: OH

**Survey Report - Geographic** 

23 April, 2012





#### Survey Report - Geographic



Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site: Well: NBU 921-20C

Wellbore:

NBU 921-20C

Design:

ОН ОН Local Co-pidinate Reference:

TVD Reference: MD Reference: North Reference: Site NBU 921-20C

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54) GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

True

Survey Calculation Method:

Database:

Minimum Curvature EDM 5000.1 Single User Db

**Project** 

UTAH - UTM (feet), NAD27, Zone 12N

Map System: Geo Datum:

Universal Transverse Mercator (US Survey Feet)

NAD 1927 (NADCON CONUS)

Map Zone:

Zone 12N (114 W to 108 W)

System Datum:

Mean Sea Level

Site

NBU 921-20C, SECTION 20 T9S R21E

0.00 ft

Site Position: From:

Northing: Easting:

14,539,155.63 usft

Latitude: Longitude: 40.027259

Position Uncertainty:

Well

Lat/Long

Slot Radius:

2.038.993.22 usft 13.200 in

**Grid Convergence:** 

-109.576268 0.92 °

NBU 921-20C, 588' FNL 2261' FWL

**IGRF2010** 

+N/-S +E/-W n no ff

Northing: Easting:

14,539,155.63 usft 2,038,993.22 usft Latitude: Longitude: 40.027259

**Position Uncertainty** 

0.00 ft 0.00 ft

Wellhead Elevation:

03/23/12

0.00

Ground Level:

65.86

-109.576268 4,862.00 ft

Wellbore

Well Position

ОН

Magnetics

**Model Name** 

Sample Date

(\*) 11.01 Dip Angle

Fleid Strength

(nT)

52,257

0.00

Design ОН

Audit Notes:

Version:

1.0

Phase:

**ACTUAL** 

Tie On Depth:

Vertical Section:

Depth From (TVD) (ft)

+N/-S (ft)

0.00

+E/-W (ft) 0.00 Direction (°)

283.09

**Survey Program** 

04/23/12 Date

From

10.00

2,986,00

To

Survey (Wellbore)

2,905.00 Survey #1 SDI MWD SURFACE (OH)

11,426.00 Survey #2 SDI MWD PRODUCTION (OH)

**Tool Name** SDI MWD

SDI MWD

Description

SDI MWD - Standard ver 1.0.1 SDI MWD - Standard ver 1.0.1

Survey			and the						
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0,00	0.00	0.00	0,00	14.539,155,63	2,038,993,22	40.027259	-109.576268
10.00	0.00	0.00	10.00	0.00	0.00	14,539,155.63	2,038,993.22	40.027259	-109.576268
179.00	0.18	44.59	179.00	0.19	0.19	14,539,155.82	2,038,993.40	40.027260	-109.576268
FIRST SI	OI MIWD SURF	ACE SURVE	Y						
271.00	0.26	62.43	271.00	0.39	0.47	14,539,156.02	2,038,993.69	40.027260	-109.576267
361.00	0.18	21.47	361.00	0.61	0.71	14,539,156.25	2,038,993.92	40.027261	-109.576266
454.00	0.26	16.99	454.00	0,95	0.82	14,539,156.59	2,038,994.03	40.027262	-109.576265
548.00	0.18	355.98	548.00	1.30	0.87	14,539,156.94	2,038,994.07	40.027263	-109.576265
641.00	0.26	46.43	641.00	1.59	1.02	14,539,157.24	2,038,994.21	40.027263	-109.576265
736.00	0.35	106.11	736.00	1.66	1.45	14,539,157.31	2,038,994.64	40.027264	-109.576263
830.00	0.35	94.86	829.99	1.56	2.01	14,539,157.22	2,038,995.21	40.027263	-109.576261



#### SDI Survey Report - Geographic



Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site: Well: NBU 921-20C

Wellbore:

NBU 921-20C

ОН ОН Design:

Local Co-prdinate Reference:

TVD Reference: MD Reference:

North Reference:

Survey Calculation Method:

Database:

Site NBU 921-20C

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54) GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

True

Minimum Curvature

Measured			Vertical			Map	Map		
Depth (ft)	Inclination (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
924.00	0.09	347.02	923.99	1.61	2.28	14,539,157.27	2,038,995.48	40.027264	-109.5762
1,017.00	0.18	0.73	1,016.99	1.82	2.27	14,539,157.49	2,038,995.46	40.027264	-109.5762
1,110.00	0.10	342.45	1,109.99	2.04	2.25	14,539,157.70	2,038,995.43	40.027265	-109.5762
1,203.00	0.03	245.77	1,202.99	2.05	2.09	14,539,157.71	2,038,995.28	40.027265	-109.5762
1,296.00	0.07	319.14	1,295.99	2.03	1.92	14,539,157.69	2,038,995.11	40.027265	-109.5762
1,392.00	0.26	158.05	1,391.99	1.87	1.96	14,539,157.53	2,038,995.16	40.027264	-109.576
1,487.00	0.09	161.39	1,486.99	1.60	2.07	14,539,157.26	2,038,995.26	40.027264	-109.576
1,581.00	0.09	276.62	1,580.99	1.54	2.02	14,539,157.20	2,038,995.22	40.027263	-109.576
1,677.00	0.09	253.33	1,676.99	1.53	1.87	14,539,157,19	2,038,995.07	40.027263	-109.576
1,772.00	0.35	214.74	1,771.99	1.27	1.64	14,539,156.92	2,038,994.84	40.027263	-109.576
1,867.00	0.55	270,55	1,866.99	1.04	1.01	14,539,156,68	2,038,994.22	40,027262	-109.576
1,961.00	0.89	282,38	1,960.98	1.20	-0.15	14,539,156.82	2,038,993.05	40.027262	-109.576
2,055.00	1.14	297.62	2,054.97	1.79	-1.69	14,539,157.39	2,038,991.50	40.027264	-109.576
2,149.00	1.41	295.69	2,148.94	2.72	-3.56	14,539,158.29	2,038,989.62	40.027267	-109.576
2,244.00	1.41	299,82	2,243.91	3.81	-5.63	14,539,159.35	2,038,987.53	40.027270	-109.576
2,339.00	0.62	296.30	2,338,90	4.62	-7.10	14,539,160.13	2,038,986.04	40.027272	-109.576
2,435.00	0.44	310.72	2,434.89	5.09	-7.85	14,539,160.59	2,038,985.29	40.027273	-109.576
2,529.00		214.83	2,528.89	5.26	-8.17	14,539,160.76	2,038,984.97	40.027274	-109.576
2,623.00	0.18	218.34	2,622.89	5.09	-8.30	14,539,160.58	2,038,984.84	40.027273	-109.576
2,719.00		199.27	2.718.89	4.55	-8.54	14,539,160.04	2,038,984.61	40.027272	-109.576
2,811.00		197.43	2,810.88	3.54	-8.87	14,539,159.03	2,038,984.30	40.027269	-109.576
2,905.00	0.97	194.00	2,904.87	2.15	-9.26	14,539,157.63	2,038,983.93	40,027265	-109.576
	OI MWD SURF		•			,,	_,,		
2,986.00		193,91	2,985,86	0.64	-9.63	14,539,156.12	2,038,983,58	40.027261	-109,576
	DI MWD PROI			0.04	-5.55	14,559,100,12	2,000,000.00	40.027201	-100,070
3,081.00		194.91	3,080.84	-1.27	-10.12	14,539,154.20	2,038,983.12	40.027256	-109.576
3,176.00		350.42	3,175.83	-2.02	-10.40	14,539,153.44	2,038,982.86	40.027254	-109,576
3,271.00		119.12	3,270.83	-1.95	-10.24	14,539,153.51	2,038,983.02	40.027254	-109.576
3,365.00		94.29	3,364.83	-2.07	-9.85	14,539,153.40	2,038,983.40	40,027253	-109.576
3,460.00		116.37	3,459.83	-2.20	-9.43	14,539,153.28	2,038,983.83	40.027253	-109.576
3,555.00		136.52	3,554.83	-2.68	-8.84	14,539,152.80	2,038,984.42	40.027252	-109.576
3,650.00		143.72	3,649.82	-3.71	-8.01	14,539,151.79	2,038,985.27	40.027249	-109.576
3,745.00		158.23	3,744.80	-5.37	-7.13	14,539,150.14	2,038,986.18	40.027244	-109.576
3,840.00		165.70	3,839.78	-7,37	-6.47	14,539,148.15	2,038,986.87	40.027239	-109,576
3,934.00		122.93	3,933.77	-8.54	-5.94	14,539,147.00	2,038,987.42	40.027236	-109.576
4,029.00		147.94	4,028.76	-9.16	-5.38	14,539,146.39	2,038,987.98	40.027234	-109.576
4,124.00		152.25	4,123.75	-10.24	-4.77	14,539,145.32	2,038,988.61	40.027231	-109.576
4,219.00		131.68	4,218.74	-11.61	-3.61	14,539,143.96	2,038,989.79	40.027227	-109,576
4,314.00		134.32	4,313.71	-13.00	-2.12	14,539,142.60	2,038,991.31	40.027223	-109.576
4,409.00		141.44	4,408.69	-14.51	-0.76	14,539,141.10	2,038,992.69	40.027219	-109.576
4,503.00		135.73	4,502.67	-16.19	0.72	14,539,139.45	2,038,994.20	40.027215	-109.576
4,599.00		145.66	4,598.64	-18.06	2.25	14,539,137.60	2,038,995.76	40.027209	-109.576
4,693.00		155,59	4,692.60	-20.19	3.44	14,539,135.50	2,038,996.99	40.027204	-109,576
4,788.00		162.71	4,787.57	-22.53	4.33	14,539,133.17	2,038,997.91	40.027197	-109.576
4,883.00		183.28	4,882.55	-24.40	4.67	14,539,131.30	2,038,998.29	40.027192	-109.576
4,978.00		162.01	4,977.54	-25.68	4.84	14,539,130.03	2,038,998.47	40.027189	-109.576
5,073.00		174.84	5,072.53	-27.18	5.12	14,539,128.53	2,038,998.78	40.027184	-109.576
5,168.00		174.05	5,167.51	-28.85	5.28	14,539,126.86	2,038,998.96	40.027180	-109.576
5,263.00		266.42	5,262.51	-29.69	4.79	14,539,126.02	2,038,998.48	40.027178	-109.576
5,358.00		323,46	5,357.50	-29.14	3.77	14,539,126.55	2,038,997.46	40.027179	-109.576
5,452.00		320.12	5,451.48	-27.51	2.47	14,539,128.16	2,038,996.13	40.027184	-109.576
5,547.00		334.27	5,546.41	-24.47	0.63	14,539,131.17	2,038,994.24	40.027192	-109.576
5,642.00		336.47	5,641.32	-20.76	-1.08	14,539,134.85	2,038,992.47	40.027202	-109.576
5,737.00			5,736.26	-17.54	-2.43	14,539,138.05	2,038,991.07	40.027211	-109.576
5,832.00			5,831.18	-13.83	-3.44	14,539,141.74	2,038,990.00	40.027221	-109.576



### Survey Report - Geographic



Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site: Well: NBU 921-20C

Wellbore:

NBU 921-20C

Design:

ОН

Local Co-prdinate Reference:

Site NBU 921-20C

TVD Reference: MD Reference:

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54) GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

North Reference:

True Minimum Curvature

Survey Calculation Method:

EDM 5000.1 Single User Db

ОН Database:

leasured			Vertical Depth			Map Northing	Map		
Depth (ft)	Inclination (°)	Azimuth (°)	(ft)	+N/-S (ft)	+E/-W (ft)	(usft)	Easting (usft)	Latitude	Longitude
5,927.00	2.20	353,43	5,926.09	-9.79	-4,05	14,539,145.77	2,038,989.32	40.027232	-109.5762
6,022.00	1.23	8.55	6,021.05	-6.97	-4.11	14,539,148.59	2,038,989.22	40.027240	-109.5762
6,116.00	1.85	330.91	6,115.01	-4.65	-4.70	14,539,150.90	2,038,988.60	40.027246	-109.5762
6,211.00	1.87	323.88	6,209.96	-2.06	-6.36	14,539,153.47	2,038,986.90	40.027253	-109.576
6,306.00	2.37	315.64	6,304.90	0.60	-8.65	14,539,156.09	2,038,984.57	40.027261	-109.576
6,401.00	2.04	317.37	6,399.83	3.25	-11.16	14,539,158.70	2,038,982.01	40.027268	-109.576
6,496.00	1.58	302.28	6,494.78	5.19	-13.42	14,539,160.60	2,038,979.72	40.027273	-109.576
6,591.00	2.55	320.03	6,589.72	7.51	-15.88	14.539.162.88	2,038,977.22	40.027280	-109.576
6,685.00	2.11	318.01	6,683.64	10.40	-18.38	14,539,165.73	2,038,974.67	40.027288	-109.576
6,780.00	1.58	309.59	6,778.59	12.53	-20.56	14,539,167.83	2,038,972.46	40.027294	-109.576
6,875.00	2.37	335,15	6,873.54	15.15	-22.40	14,539,170.42	2,038,970.59	40.027301	-109.576
6,970.00	1.85	335,24	6,968.47	18.33	-23.86	14,539,173.57	2,038,969.07	40.027309	-109.576
7,065.00	3.43	341.13	7,063.37	22.41	-25.43	14,539,177.62	2,038,967.44	40.027321	-109.576
7,160.00	2.90	342.80	7,158.22	27.39	-27.06	14,539,182.58	2,038,965.73	40.027334	-109.576
7,100.00	2.20	345.35	7,150.22	31.45	-28.23	14,539,186.62	2,038,964.49	40.027345	-109.576
7,255.00	1.67	338.49	7,233.13	34.50	-29.20	14,539,189.66	2,038,963.48	40.027354	-109.576
		347.48	7,348.07 7,443.00	34.50 37.95	-29.20 -30.18	14,539,193.09	2,038,962.44	40.027363	-109.576
7,445.00	2.67								
7,540.00	2.37	353.17	7,537.91	42.06	-30.90	14,539,197.19	2,038,961.66	40.027375	-109.576 -109.576
7,634.00	1.93	353.70	7,631.85	45.57	-31.30	14,539,200.69	2,038,961.20	40.027384	
7,729.00	1.23	347.63	7,726.81	48.15	-31.70	14,539,203.27	2,038,960.76	40.027391	-109.576
7,823.00		358.35	7,820.78	50.43	-31.95	14,539,205.54	2,038,960.47	40.027398	-109.576
7,918.00	1.23	350.90	7,915.75	52.75	-32.15	14,539,207.85	2,038,960,23	40.027404	-109.576
8,013.00	1.14	7.32	8,010.73	54.69	-32.19	14,539,209.80	2,038,960.16	40.027409	-109.576
8,108.00	0.79	1.43	8,105.72	56.28	-32.05	14,539,211.39	2,038,960.27	40.027414	-109.576
8,203.00		357.91	8,200.71	57.52	-32.06	14,539,212.63	2,038,960.25	40.027417	-109.576
8,298.00	0.53	10.04	8,295.71	58.53	-32.00	14,539,213.64	2,038,960.29	40.027420	-109.576
8,393.00	0.44	352.47	8,390.70	59.33	-31.97	14,539,214.43	2,038,960.30	40.027422	-109.576
8,488.00	0.35	35.18	8,485.70	59.92	-31.85	14,539,215.04	2,038,960.41	40.027424	-109.576
8,583.00	0.43	57.83	8,580.70	60.35	-31.38	14,539,215.47	2,038,960.88	40.027425	-109.576
8,678.00	0.70	76.51	8,675.69	60.68	-30.52	14,539,215.81	2,038,961.74	40.027426	-109.576
8,772.00	0.97	123.97	8,769.68	60.37	-29.30	14,539,215.52	2,038,962.96	40.027425	-109.576
8,867.00	0.97	154.62	8,864.67	59.19	-28.29	14,539,214.36	2,038,963.99	40.027422	-109,576
8,962.00	1.76	157.88	8,959.64	57.11	-27.39	14,539,212.29	2,038,964.92	40.027416	-109.576
9,057.00	1.93	158.67	9,054.59	54.27	-26.26	14,539,209.47	2,038,966.09	40.027408	-109.576
9,151.00	2.20	161.30	9,148.53	51.09	-25,11	14,539,206.31	2,038,967.30	40.027399	-109.576
9,246.00	2.55	162.62	9,243.45	47.34	-23.89	14,539,202.58	2,038,968.57	40.027389	-109.576
9,341.00		162.45	9,338.36	43.45	-22,67	14,539,198.71	2,038,969,86	40.027378	-109.576
9,436.00		165,17	9,433.29	39.89	-21.63	14,539,195,17	2,038,970.96	40.027369	-109,576
9,530.00		159.28	9,527.22	36.46	-20.52	14,539,191.76	2,038,972.12	40.027359	-109.576
9,625.00		163.85	9,622.14	32.73	-19.28	14,539,188.04	2,038,973.42	40.027349	-109.576
9,720.00		160.34	9,717.05	28.71	-17.98	14,539,184.04	2,038,974.78	40.027338	-109.576
9,815.00		169.18	9,811.94	24.44	-16.82	14,539,179.80	2,038,976.01	40,027326	-109.576
9,910.00		167,63	9,906.85	20.25	-15.96	14,539,175.61	2,038,976.94	40.027315	-109.576
10,005.00		166.40	10,001.76	16.41	-15.08	14,539,171.79	2,038,977.88	40.027304	-109.576
10,005.00		159.99	10,001.70	13.07	-14.09	14,539,168.47	2,038,978.92	40.027295	-109.576
10,099.00		154.71	10,095.70	9.97	-14.09 -12.79	14,539,165.39	2,038,980.28	40.027286	-109.576
		155.13	•	6.78	-11.30	14,539,162.23	2,038,980.28	40.027278	-109.576
10,289.00			10,285.58						-109.576
10,384.00			10,380.52	3.87	-10.12	14,539,159.33	2,038,983.04	40.027270	-109,576
10,479.00			10,475.48	1.02	-9.22	14,539,156.50	2,038,983.99	40.027262	
10,574.00			10,570.42	-2.12	-8.31	14,539,153.37	2,038,984.94	40.027253	-109.576
10,668.00			10,664.37	-5.14	-7.37	14,539,150.37	2,038,985.93	40,027245	-109.576
10,762.00			10,758.32	-7.73	-6.29	14,539,147.80	2,038,987.05	40.027238	-109.576
10,857.00		156.38	10,853.28	-10.24	-5,13	14,539,145.31	2,038,988.26	40.027231	-109.576
10,952.00	2.11	155.77	10,948.23	-13.17	-3,83	14,539,142.40	2,038,989.60	40.027223	-109.576



#### Survey Report - Geographic

TVD Reference:



Company:

US ROCKIES REGION PLANNING

Project:

UTAH - UTM (feet), NAD27, Zone 12N

Site: Well: NBU 921-20C NBU 921-20C

Wellbore:

ОН Design: OH Local Co-prdinate Reference:

Site NBU 921-20C

True

GL 4862 & KB 19 @ 4881.00ft (PIONEER 54) GL 4862 & KB 19 @ 4881.00ft (PIONEER 54)

MD Reference: North Reference:

Survey Calculation Method:

Database:

Minimum Curvature

Measured	10.0		Vertical			Map	Мар		
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting		
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
11,142.00	2,46	154.36	11,138.08	-19.85	-0,57	14,539,135.77	2,038,992.97	40.027205	-109.57627
11,237.00	2.29	153.48	11,233.00	-23.39	1.16	14,539,132.26	2,038,994.75	40.027195	-109.57626
11,333.00	2.46	156.64	11,328.92	-27.00	2.83	14,539,128.68	2,038,996.49	40.027185	-109.57625
11,376.00	2.55	155.33	11,371.88	-28.71	3.60	14,539,126.98	2,038,997.28	40.027180	-109.57625
LAST SD	MWD PROD	UCTION SUR	VEY						
11,426.00	2.55	155.33	11,421.83	-30.73	4.53	14,539,124.97	2,038,998.24	40.027175	-109.57625

(ft) (ft)	(ft)	(ft)	Comment
	9.00 0.19	0.19	FIRST SDI MWD SURFACE SURVEY
, , ,	14.87     2.15       15.86     0.64	-9. <b>26</b> -9. <b>63</b>	
11,376.00 11,37 11,426.00 11,42		3.60 4.53	

Checked By:	• • •	Approved By:	Date:	
-				

Sundry Number: 45487 API Well Number: 43047507170000

	STATE OF UTAH		FORM 9
ι	DEPARTMENT OF NATURAL RESOUR DIVISION OF OIL, GAS, AND M		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU 0575
SUNDR	Y NOTICES AND REPORTS	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE
current bottom-hole depth, i	reenter plugged wells, or to drill horiz		
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: NBU 921-20C		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ON	ISHORE, L.P.		<b>9. API NUMBER:</b> 43047507170000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th	n Street, Suite 600, Denver, CO, 802	<b>PHONE NUMBER:</b> 720	9. FIELD and POOL or WILDCAT: 929-65NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0588 FNL 2261 FWL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH		ridian: S	STATE: UTAH
11. CHECI	K APPROPRIATE BOXES TO INDICA	ATE NATURE OF NOTICE, F	REPORT, OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	N
	ACIDIZE	ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
Approximate date from film status	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMAT	ONS CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	NEW CONSTRUCTION
8/20/2013	OPERATOR CHANGE	PLUG AND ABANDON	PLUG BACK
SBIID REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON
DRILLING REPORT			
Report Date.		SI TA STATUS EXTENSION	
	ELL RFACE: I FWL N, TOWNSHIP, RANGE, MERIDIAN: / Section: 20 Township: 09.0S Range: 21.0E Meridian: S  CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA  ISSION  TYPE OF ACTION    ACIDIZE		
The operator cond the subject well on	ucted the following workov 8/20/2013. Please see the	er/wellbore cleanout attached chronolog	on cal Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY
NAME (DI EASE DDINIT)	DHONE NIIM	RED TITLE	
SUNDRY NOTICES AND REPORTS ON WELLS  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.  1. TYPE OF WELL  2. NAME OF OPERATOR:			

				U	S ROC	KIES RE	EGION			
				Opera	tion S	Summa	ry Report			
Well: NBU 921-2	20C						Spud Date: 3/2	9/2012		
Project: UTAH-L	JINTAH		Site: NB	NBU 921-20C Rig Name No: SWABBCO 8/8						
Event: WELL W	ORK EXPENSE		Start Dat	te: 8/13/20	13			End Date: 8/20/2013		
Active Datum: R	RKB @4,881.00	usft (above Mean S	ea	UWI: NE/NW/0/9/S/21/E/20/0/0/26/PM/N/588/W/0/2261/0/0						
Date	Time Start-En	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation		
8/13/2013	13:00 - 15		MAINT	30	Α	Р	(***)	MIRU, 150# FCP, CONTROL TBG W/ 10 BBLS T-MAC, ND WH, P/U ON TBG, TBG STUCK, ADD 8' SUB UNDER TBG HANGER, NU BOP'S, RU FLOOR & TBG EQUIP		
	15:30 - 17	:00 1.50	MAINT	31		Р		WORK STUCK TBG, STILL STUCK, DROP STANDING VALVE & FILL TBG W/ T-MAC, SDFN		
8/14/2013	6:45 - 7:	00 0.25	MAINT	48		Р		HSM, JSA		
	7:00 - 7:	30 0.50	MAINT	31		Р		700# SICP, BOLW CSG DN TO TNK, WORK TBG STILL STUCK		
	7:30 - 10		MAINT	34	A	Р		MIRU CUTTERS WIRELINE, RIH W/ STUCK PIPE LOG, FING CSG BRIDGE @ 9470'-9480' & 10,906'-10,940', POOH W/ LOGGING TOOLS, RIH W/ 8 SHOT TBG PUNCH, PUNCH TBG @ 9475', POOH TBG PUNCH		
	10:00 - 11		MAINT	31		Р		WORK STUCK TBG TO TRY & BREAK TOP BRIDGE		
	11:00 - 13	:00 2.00	MAINT	34	Α	Р		RIH W/ FREEPOINT TOOLS, FIND TBG STILL STUCK @ 9470', POOH W/ FREEPOINT TOOLS, RIH W/ CHEM CUTTER & CUT TBG @ 9460', POOH, RD CUTTERS		
	13:00 - 16	:00 3.00	MAINT	31	I	Р		MIRU SCAN TECH, TOOH SCAN 2-3/8" TBG, SCANED 297 JTS TBG ALL JTS WERE GOOD, RD SCAN TECH, SDFN		
8/15/2013	7:00 - 7:	15 0.25	MAINT	48		Р		HSM-JSA		
	7:15 - 18	:00 10.75	MAINT	44		Р		PU WASH PIPE & OVERSHOT RIH W/ 294 JTS 2 3/8" TBG, RU PWR SWVL, MIRU GROSS FOAM BRK CIRC, CONT TO RIH TAG FILL @ 9470' C/O 10' FILL, CIRC CLN, TRY TO LATCH STUCK TBG FOR 45 MIN NO SUCCESS, RD PWR SWVL & GROSS FOAM, POOH STD BACK TBG,SWI, SDFN.		
8/16/2013	7:00 - 7:	15 0.25	MAINT	48		Р		HSM-JSA		
	7:15 - 17		MAINT	31	В	Р		SICP 700 PSI, CONTROL WELL W/ 30 BBLS TMAC, PU OVERSHOT RIH LATCH STUCK TBG @ 9460', MIRU CUTTERS RIH CHEM CUT TBG @ 10890', POOH RDMO CUTTERS, POOH W/ TBG, LD OVERSHOT, PU OVERSHOT & WASHPIPE RIH W/ 166 JTS TBG, LEFT WELL OPEN TO SALES, SDFWE.		
8/19/2013	6:45 - 7:		MAINT	48		Р		HSM, JSA		
	7:00 - 8:		MAINT	31	В	Р		TIH W/ TBG, TAG FILL @ 10,909'		
	8:30 - 11	:45 3.25	MAINT	31	В	Р		MIRU GROSS FOAM, MIRU PWR SWVL, ESTB CIRC IN 1 HR 15 MINS, WASH OVER FROM 10,909' TO 11,288' (90' BELOW BTM PERF)		
	11:45 - 15	:45 4.00	MAINT	31	В	Р		TOOH W/ 2-3/8" TBG, PULL FISH THROUGH WASH PIPE, LD WASH PIPE		
	15:45 - 17	:00 1.25	MAINT	31	I	Р		M/U LSN, TIH W/ 140 JTS 2-3/8" TBG, SDFN		
8/20/2013	6:45 - 7:	00 0.25	MAINT	48		Р		HSM, JSA		
	7:00 - 9:	30 2.50	MAINT	31	I	Р		1000# SICP, CONTROL WELL W/ 40 BBLS T-MAC, TIH W/ 2-3/8" TBG, BROACH TBG W/ 1.910 BROACH TO LSN, LAND TBG ON HANGER W/ 346 JTS 2-3/8" L-80		

12/2/2013 2:31:20PM 1

Sundry	Number:	45487	APT We	<u> </u>	Jumbe	<u>r: 4</u>	3047507	170000		
				U	S ROC	KIES RI	EGION			
				Opera	ation S	Summa	ary Report			
Well: NBU 921-2	20C						Spud Date: 3/2	29/2012		
Project: UTAH-UINTAH Site: NBU				J 921-20C				Rig Name No: SWABBCO 8/8		
Event: WELL WORK EXPENSE Start Date					013			End Date: 8/20/2013		
Active Datum: RKB @4,881.00usft (above Mean Sea Level)				UWI: NE/NW/0/9/S/21/E/20/0/0/26/PM/N/588/W/0/2261/0/0						
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)		Operation	
	9:30 - 11:30	2.00	MAINT	30	С	Р		ND BOP'S, NU WH, SW	I, RDMO	
								КВ	19'	
								HANGER	.83'	
								346 JTS 2-3/8" L-80	10,973.55'	
								LSN	1.50'	
								EOT @	10.994.88'	

12/2/2013 2:31:20PM 2

RECEIVED: Dec. 02, 2013